PHILADELPHIA, MARCH 8, 1884.

ORIGINAL LECTURES.

CLINICAL LECTURE

ON THE TREATMENT OF CARBUNCLE BY COMPRESSION.

Delivered in the Hospital of the University of Pennsylvania,

BY JOHN ASHHURST, JR., M.D.,

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Reported by LOUIS J. LAUTENBACH, M.D.

THIS man has been already before some of my ward classes; but, as there are many present to-day who do not meet me in the wards, I am glad to have the opportunity of bringing him before you. He presents one of the most instructive cases which we have had in the hospital this winter.

This patient was admitted to the ward on Wednesday of last week, being ten days ago, with a very large carbuncle of three weeks' duration. It began as a pimple, and gradually increased in size. This is the usual history of a carbuncle: first, the presence of a pimple, which soon develops a central vesicle, and then, either with or without irritation, such as scratching or pricking with a pin, begins to spread, the carbuncle in a week or ten days attaining its maximum size, seldom more than four or five inches in diameter. Yesterday a week ago, measuring this carbuncle, we found its dimensions to be nine inches by eight, independently of the large amount of indurated tissue around the livid mass itself. The dimensions of the carbuncle, including this indurated tissue, were at least eleven by ten inches, and it was fully three inches in depth.

A carbuncle is in reality nothing but a large boil: there is no absolute distinction between a furuncle and a carbuncle. This carbuncle is now smaller than it was when the patient came to the hospital, and it is subsiding every day, though up to the time of the patient's admission it had been steadily increasing in size.

There are some peculiarities about the ulceration of a carbuncle which have not been understood until quite recently. It had long been observed that carbuncles were apt to ulcerate at numerous distinct points, giving the surface a sieve-like or cribriform appearance; but the anatomical explanation of this condition has only been furnished within a few years by an American surgeon, Dr. Collins Warren, of Boston. By microscopical examination of the skin of the back, where carbuncles usually occur, Dr. Warren has found little processes or tubes of fat connecting the deeper tissues with the surface; he has named these tubes the fatty columns, or *columnæ adiposæ;* and it is along these columns that the pus of the carbuncle, which originates as a phlegmon of the deep cellular tissue, begins to make its way to the surface. In this case there are as yet but two openings, which lie close together and probably will soon coalesce. A slough—what is popularly called the *core*—is beginning to protrude from one of these openings: it is a slough of the deep cellular tissue.

Carbuncle, while a very painful and annoying affection, is usually not a very dangerous one when properly treated. Death does, however, occasionally follow, and I have recently seen the statistics published by a German surgeon, who treated eleven cases of carbuncle by incision, six of these proving fatal by pyæmia. I have myself seen no death from carbuncle, nor do I recall any in the practice of other surgeons, unless in cases where there was some grave constitutional complication.

Carbuncle in one part of the body, the face, is considered particularly dangerous. It is said that but one case in nine gets well; but my own observation would lead me to think this an exaggerated estimate. This is a comparatively rare form of the disease, but I have seen two or three cases of facial carbuncle, all of which have ended favorably; it is true, however, that none of them were very severe. Death in facial carbuncle results from transference of the inflammation to the sinuses of the dura mater, or from pyæmia. But in ordinary carbuncle, unless the patient has Bright's disease, or diabetes (an affection which predisposes to carbuncle), or unless the inflamed mass is so situated as to endanger internal organs,—peritonitis may follow an abdominal carbuncle,—death will seldom ensue, except as a result of injudicious treatment.

The old-fashioned treatment, which in my student-days we were taught should be used in every case, was to make an incision the entire length and depth of the

carbuncle, this incision being crossed by another at right angles to it, and extending the entire breadth and depth. Had this mode of treatment been practised in the case before you, we should have had two incisions, one eleven inches long by three deep, and the other of the same depth and ten inches in length. You can see what an enormous wound would have been made, and how much blood would have necessarily been lost. Death even may occur from hemorrhage, for there is a recorded case in which a surgeon made the regulation-incisions in the afternoon and directed the nurse to apply a poultice, saying that he would see the patient in the morning. Next morning he went to see his patient, and found that he had died from hemorrhage during the night. Then, besides this risk from bleeding, incisions increase the risk of absorption of poisonous matter, as they leave a very large raw surface. Another, though less serious, objection is that the resulting wound is a very large one, and that the time required for healing is correspondingly prolonged. In order to avoid hemorrhage, some surgeons practise subcutaneous incision; but this is an uncertain operation and presents no particular advantage.

Of course, the treatment by incision has something to be said in its favor. No course of treatment could have been in general use for so many years without being of some value. It somewhat diminishes the pain of the carbuncle, and sometimes seems to prevent its spread, but it is not always certain even that it will do this. The disadvantages of incision I consider much greater than its advantages.

There is another mode of treatment which is adopted either by itself or in connection with incision,—the use of caustics. They are either employed to cause central sloughing or are applied as "caustic arrows," like the spokes of a wheel. The use of caustics in this way was introduced by Maisonneuve for the removal of tumors, and Sir James Simpson recommended the injection of caustic solutions in a similar radiating manner. I can remember quite distinctly the case of an old man with carbuncle who was a patient in the Pennsylvania Hospital when I was a resident physician there. The usual crucial incisions had been made, causing great pain and free bleeding, and it was my duty every day to cauterize the wound with the solid stick of nitrate of silver; and I can remember how that old man used to fairly shiver with the pain at every dressing. He got well at last, but it was after many weeks of needless suffering.

The first case in which I used the pressure-treatment, which I now invariably employ, was that of an old woman at the Episcopal Hospital, who had a large carbuncle, and who was so old and feeble that I thought it would be really dangerous to make incisions. Mr. O'Ferrall, an Irish surgeon, was the first to recommend this mode of treatment: he applied compression by means of a plaster made to cover the whole mass of the carbuncle, and when suppuration began he cut a central opening for the escape of pus. I have preferred to use adhesive strips laid on concentrically, just as we use them in the treatment of swelled testicle.

We begin to apply the strips at the margin, and gradually bring them more and more inward, leaving a space at the centre to allow the slough to come out. We began treatment in this case last Wednesday a week: up to that time the carbuncle had been constantly increasing, but since then the progress, fortunately, has been the other way. The pain was immediately much relieved, so that the patient has now only an occasional darting pain, but nothing really to give him distress. The carbuncle is smaller, and is getting flatter. It now measures eight by seven and a half inches, and is not more than two and a half inches deep. The patient has not lost a drachm of blood since he came into the hospital. You can see that the pus and sloughs of cellular tissue are slowly discharging themselves, and there is so far no sign of any additional opening. We have every reason for thinking that this patient will convalesce without any further trouble. Over the centre of the carbuncle we are using a small poultice, which we will change after a time for a dressing of resin cerate or zinc ointment, as may seem desirable.

There is another mode of treatment of which I have heard, but which I am happy to say I have never seen practised. Some surgeons have been so heroic as to excise the whole mass of the carbuncle; some surgeons, too, have excised gummatous tumors. The first can be made to disappear by simple compression, and the second will be absorbed under the use of

iodide of potassium. To excise the one is as unjustifiable and as unnecessary as to excise the other.

In this case, on account of the mode of treatment which we have adopted, the ulcer left after the separation of the sloughs will be small, and the cure will be much more rapid than it would be if we had made incisions. I do not know of any instance in which the dicta of "authority" have come down to us with more injury than in the treatment of carbuncle by incision.

ORIGINAL COMMUNICATIONS.

REPORT ON THE PROGRESS OF PHYSIOLOGY.

BY ROBERT MEADE SMITH, M.D.,
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MECHANICAL IRRITATION OF THE CEREBRAL CORTEX.

THE doctrine of the localization of motor centres in the cerebral cortex is greatly strengthened by the announcement of Prof. Luciani, of Florence (*Centralblatt für die Medicinischen Wissenschaften*, December 15, 1883), that he has succeeded in producing motor phenomena by mechanical stimulation of the cerebral cortex. In 1878, in his work on the causation of epilepsy, Prof. Luciani first showed that in the dog that portion of the cerebral cortex which lies in the crucial sulcus was, like the sigmoid gyrus, capable of excitation with the induction current, and that it also contained motor centres for the skin and muscle of the hind- and fore-foot of the opposite side. Consequently he claims that excision of the exterior post-crucial convolution does not remove these centres, as there is at least three times as much surface of cortex containing these centres in the crucial sulcus as on the above-mentioned convolution.

In some new experiments on this locality he has succeeded in exciting these centres by well-defined mechanical irritation. Numerous attempts have already been made to stimulate the cerebral cortex mechanically, but always in vain, because, as the author claims, the irritations have been always confined to the superficial portion of the cortex. Prof. Luciani, however, claims that by applying the excitant to the deeper portion of the sulcus cruciatus he has invariably found this portion of the cortex susceptible of mechanical stimulation when the following conditions have been observed. First, in exposing the brain, the animal must have lost little blood and have been little excited; second, the animal must be strong and full-grown; third, the morphia narcosis must not be very profound, or if chloroform has been employed its effects must have largely disappeared before the experiment can be successful; fourth, before the mechanical irritability of the cortex is attempted, its electrical irritability must first be proved to be present.

In order to produce mechanical irritation, all that is necessary is to divide the arachnoid in the centre and to divide the bridge which connects the borders of the crucial sulcus, avoiding the vein which passes through it. A rasp is then passed into the sulcus and gently scraped over the surface of the furrow. Complex movements of the feet of the opposite side at once are produced,—more marked in the hind-foot when the inner and deeper part is irritated, more marked in the fore-foot when the irritation is applied to the outer or more superficial half of the crucial sulcus.

The effects are therefore the same in mechanical as in electrical stimulation, though less energetic in the former. The chief difference in the consequences of the use of the two forms of irritation is that the electrical stimulation may be often employed with the same result, while with mechanical irritation the excitability of the part experimented on at once declines and is soon entirely destroyed. It would appear, therefore, that mechanical stimulation of the cortex, as in other instances of mechanical nerve-irritation, is effective only by producing destruction of nerve-tissue.

Prof. Luciani explains the fact that mechanical stimulation of the convolutions fails to produce results, while the same form of irritation applied to the deeper-lying parts of the sulcus produces well-defined movements, as due to the loss of irritability in the former from exposure to the air and from mechanical injury in the operation, while the portions in the sulcus are protected by their position, and therefore preserve their irritability to both mechanical and electrical stimuli, the latter

only being the case in the more exposed portions. It might also be assumed that the irritant is applied to a larger surface in the sulcus than is possible in the case of the external surface of the convolutions.

These experiments, however, do not dispose of the objection which has been urged against the localization theory, that the effects produced by irritation of the cortex are not due to stimulation of ganglion-cells, but to irritation of underlying nerve-fibres, for, as is well known, previous destruction of the gray matter by cautery does not prevent the occurrence of motor phenomena when an electrical stimulus is applied to the scar. The only possible explanation of this fact is that the irritation is conducted to underlying fibres; and the fact that Prof. Luciani's experiment is more apt to succeed when applied to the deeper layers of the cortex than when the surface is irritated might also be explained as due to an irritation of these underlying fibres. While, again, as to whether these fibres arise in the cortical ganglionic cells, whether they pass through them, or whether they are entirely unconnected with them, are questions which have not yet been satisfactorily answered.

MORPHOLOGICAL CHANGES IN THE LIVER-CELLS IN DIFFERENT STATES OF ACTIVITY.

One of the most important advances in modern physiology is the connection which has been found to exist between glandular activity and various morphological changes in the glandular elements. But, while this connection has been thoroughly worked out in the case of the salivary and sweat glands, pancreas and stomach, very little is known as to the histological changes occurring under different conditions in the liver.

In 1879, Kayser (Heidenhain, *Physiol. der Absonderungsvorgänge, Handbuch der Physiologie*, i. p. 221) described the liver-cell of a fasting animal as bounded by faint lines, finely granular in character, and with an indistinct nucleus. Twelve to fourteen hours after digestion the cells are found to be filled with large glistening granules of glycogen, which are readily dissolved out by various reagents, and then leave the cell bounded by a heavy, dark border of condensed protoplasmic cell-contents, from which fibres extend to the interior of the cell to form a coarse net-work, previously described by Kupffer, in which the nucleus may be distinctly seen.

In a paper read before the Royal Society, April 27, 1882, Langley considerably extended our knowledge of the changes in the hepatic cells under various conditions. He states that the spaces of the protoplasmic net-work are occupied by (1) spherical granules, probably proteid in nature; (2) spherical globules of fat; and (3) hyaline substance, partly glycogen and partly proteid in nature. In the frog, during the long winter fast, the granules are confined to the inner portions of the cells and form there a marked inner granular zone, while the glycogen increases in amount and is stored up in the outer portion of the cells, where there are no granules, the nucleus lying on the border of the two zones. Analogous changes take place when the animal is fed, confirming the general fact that similar changes occur in fasting and in digestion,—*i.e.*, a gradual disappearance of the outer granular zone, and a deposit in that portion of the cells of glycogen.

The disappearance of granules and the formation of glycogen which take place in winter frogs are probably partly due to the low temperature; for if the frogs whose liver-cells contain much glycogen and few granules are kept for a week or so at 20° C. the cells become granular throughout, and the glycogen largely disappears.

In the fasting mammal the protoplasmic net-work stretches throughout the cell with nearly equally-sized meshes; in the spaces of the net-work is a small amount of hyaline substance, partly glycogen, and embedded in this are rather large granules. When the liver is examined six or eight hours after digestion, there is a greater or less disappearance of granules from the centre of the cell around the nucleus; the net-work here has wider spaces and thinner bars, and the spaces are for the most part filled with glycogen, while the peripheral net-work and granules make the cell appear at first as if it had a very thick wall, probably explaining this appearance as already described by Kayser. The granules, both in the liver of the frog and in the mammalian liver, Langley believes to be concerned in the formation of some of the substances found in the bile.

The most recent contribution to this subject has been published by Afanassiew (*Pflüger's Archiv*, xxx. p. 385, and *Cen-*

tralblatt für die Medicinischen Wissenschaften, No. 31, 1883).

He finds that in the liver of a fasting animal the liver-cells are small and angular, with small nuclei; their protoplasmic intercellular net-work, as well as its finely-granular contents, as proved by microchemical reaction, is essentially albuminous in nature. In the livers of animals fed with fibrin these general characteristics remain unaltered, with the exception that the cells are somewhat larger, the protoplasmic net-works are not so small, and the granulation is more distinct. The cell-nucleus becomes larger, and lies usually in the centre of the cell, and also is finely granular in structure. Since these cells are not stained brownish red with iodine, and since their treatment with osmic acid produces no increase in the number of oil-globules present, Afanassiew concludes that feeding with fibrin increases the granular albuminous contents of the hepatic cells.

After feeding with potatoes and sugar the cell becomes very rich in glycogen, and sections show ordinarily an absence of the protoplasmic net-work, while the cells themselves are very large and filled with coarse granules or indistinct spots. The small, sharply-contoured granules which are usually met with in the livers of fasting animals as well as after feeding with meat are almost entirely absent.

After feeding with fat, oil-globules become abundant in the liver-cells; after mixed feeding, a combination of the appearances just described may be recognized. From these researches the author concludes that when a healthy animal is allowed to fast, the liver first loses its glycogen and then a part of its water: the albumen remains the longest, though a portion breaks down into fat. As a consequence of these changes, the liver-cells become smaller.

After fibrine feeding the albuminous contents of the hepatic cells are increased both absolutely and relatively, while the amount of water present becomes relatively less: consequently the granules are more closely packed together, though the entire cell becomes somewhat larger.

In feeding with potatoes and sugar the albuminous frame-work remains unaltered in quantity, but a large number of glycogen particles are now included in its meshes, and, as a consequence, the amount of water present is increased, and the liver-cells become large and rounded and compress the blood-capillaries and the interlobular connective-tissue spaces. Hence a glycogen liver is very large and clay-colored, while its acini are obliterated. After section of the hepatic nerves, the same appearances were noted as after albuminous feeding. The cells are moderately large, and contain in their protoplasmic meshes numerous sharply-outlined granules of albuminous nature. The borders of the cells are clearly defined, the nuclei large and finely granular, and the capillaries wide.

Since an increase in the bile-formation depends upon increase in blood-supply, it follows from the above that a high degree of glycogen-formation diminishes the secretion of bile, while, on the other hand, section of the hepatic nerves or albuminous diet must increase it.

In connection with this subject it may be mentioned that Pfeiffer (*Archiv für Microscopische Anatomie*, October 10, 1883) confirms the earlier statements of Pflüger and Kupffer as to the existence in the liver-cells of vacuoles in direct connection by means of fine, straight or slightly-curved canals with the bile-capillaries. This appearance, which has been attributed by Hering and others to extravasation of the injection mass, according to Pfeiffer is constant in its occurrence after injections of Berlin blue made under very low pressure into the gall-bladder of the guinea-pig, and is found throughout the entire extent of the injection, and not confined to single regions, as would be expected if due to extravasation.

These vacuoles are usually two or three for each cell, have a diameter of about one-fifth or one-sixth of that of the nucleus, are situated to one side of the cells, and are most numerous near the centre of an acinus. Sometimes the entire cell is injected, the mass, however, clearly lying in the interior of the cell, as it is bounded by the sharply-defined border of the cell, and never extends into contiguous cells.

The vacuoles have been found by the author in the liver-cells of guinea-pigs, of rabbits, and of a child: he believes they are of the same nature as the intracellular vacuoles described by Kupffer as occurring in the salivary glands of *Blatta Orientalis*. The idea that they are secretory in nature is supported by the fact that similar ap-

pearances were obtained by Wyss and Popoff by ligation of the bile-duct in rabbits.

THE CIRCULATION IN THE KIDNEYS.

Prof. Cohnheim and Dr. Roy (*Virchow's Archiv*, xcii. p. 424, and *Centralblatt f. d. Med. Wissens.*, No. 38, 1883) have studied the circulation in the kidney by means of the kidney-plethysmometer, an instrument previously employed by the latter for studying the changes in volume of the spleen (*Journal of Physiology*, January, 1882). This consists of a metal capsule, containing oil, in which the kidney, separated from the oil by a thin flexible membrane, is inserted: any change in the volume of the kidney will cause a displacement of a portion of the oil and a consequent ascent or descent of a column of fluid in a recording manometer connected with the interior of the capsule; changes in volume of the kidney may thus be graphically recorded. The kidney is exposed through an incision in the lumbar region, and well isolated, care, however, being taken not to disturb the parts around the hilus, and the organ is then placed in the "oncometer" (bulk-measurer), which has been previously warmed up to the body-temperature. During this experiment, the isolated kidney continues to secrete normal urine, and behaves otherwise as a perfectly normal organ. The blood-pressure throughout the course of the experiment is measured in the femoral or carotid artery.

The following are some of the most important results obtained by experiments made on curarized dogs:

1. The normal renal curve is parallel to the blood-pressure curve, and, like the latter, shows oscillations due to respiration and to ventricular systoles. Alterations in blood-pressure are reflected on the renal curve, an increase of the former causing most frequently a fall of the renal curve, thus indicating a diminution in volume of the kidney. In addition to these changes due to arterial variations, the volume of the kidney is subject to spontaneous fluctuations, which could not, however, be resolved into any general law.

2. When artificial respiration is interrupted and the blood-pressure thereby greatly increased, the volume of the kidney becomes greatly reduced. Section of the splanchnic nerves does not modify this "asphyctic contraction;" but when all the renal nerves are divided, interruption of respiration then produces an increase in volume of the kidney which is proportional to the increase in blood-pressure produced by the same cause. The asphyctic contraction of the renal vessels is, therefore, of a vaso-motor nature. Similar results are produced by irritation of sensory nerves and in strychnia-poisoning.

3. After section of the splanchnic nerve the kidney never increases in volume: the existence, therefore, of a tonic innervation of the renal vessels through this nerve has not been confirmed. Irritation of the central or peripheral end of this nerve produces, in the former case reflexly, in the latter directly, marked reduction in the volume of the kidney, accompanied by great increase in the general arterial pressure.

In rabbits, dogs, and cats, the majority of the renal vaso-motor nerves run through the splanchnic nerve, each splanchnic nerve containing fibres for both kidneys. The fact that irritation of the peripheral end of one splanchnic nerve often causes first expansion and then contraction of the opposite kidney may be explained on this ground. Also after section of both splanchnic nerves the kidney may be contracted by reflex stimulation: hence there must be some path of vaso-motor fibres from the spinal cord to the kidney other than through the splanchnics.

4. After section of all the nerves going to the kidney, no diminution in volume can be produced either by direct or by reflex stimulation, the curve of the paralyzed kidney running perfectly parallel to that of the blood-pressure.

Dilatation of the renal vessels was never observed as a consequence of stimulation of any of the nerve-branches which enter the hilus.

5. Simultaneous observations made on both kidneys showed that these organs, as regards their circulation, were independent of each other, complete closure of one renal artery being without effect on the circulation of the other. Closure of other branches of the aorta was also without effect.

Setschenoff (*Centralblatt f. d. Med. Wissenschaften*, No. 3, 1884) calls attention to a peculiarity of the renal circulation which has as yet escaped notice, and which plays an important part in the physiological activity of this organ.

On account of the nearness of origin of the renal arteries to the commencement of the abdominal aorta, the blood enters the kidneys under a relatively very high pressure; on the other hand, on account of the entrance of the renal veins into the vena cava at a point near its termination, the blood leaves the kidneys under an extremely low pressure. And, since the path followed by the blood in the kidneys is a relatively short one, and since the pressure in the abdominal aorta and in the inferior vena cava cannot be essentially modified by alterations in the blood-current, it follows that the chief regulator of the renal circulation is the relatively high and at the same time nearly constant difference between the pressures in the abdominal aorta and the inferior vena cava.

This great difference in pressures may serve to explain the rapidity with which the renal blood-stream overcomes the resistance of a double capillary system; and, as this difference is a constant one, a middle point of pressure between the entering and leaving streams is maintained.

According to previous conceptions of the functions of the kidney, in which this relation of the renal vein to the inferior cava was disregarded, the renal secretion, which the facts above mentioned show to be due to variations in general blood-pressure, was attributed to changes in the pressure in the renal artery alone. The rapidity of blood-current, however, even in increased arterial pressure, may remain unaltered, because the absolute difference between the pressure of the entering and leaving blood-streams remains unchanged.

Thus the diminution of urinary secretion after repeated stimulations of the vagi or after section of the spinal cord has usually been explained as due to reduction of pressure in the renal arteries and consequent slowing of the blood-current in the kidneys. But, according to Setschenoff, this result is to be attributed to the increase of pressure in the venous trunks, or, what is practically the same thing, to the absolute decrease in the difference of pressures above alluded to.

THE ACTION OF SALINE CATHARTICS.

The following is a summary of a long and elaborate paper by Dr. Matthew Hay, published in the *Journal of Anatomy and Physiology* for 1882–83. A saline purgative always excites more or less secretion from the alimentary canal, the amount of secretion varying with the nature and concentration of the salt, the bile and pancreatic juice participating very slightly. The secretion so produced is the result of glandular stimulation, and not of osmosis, though the low diffusibility of the salt impedes absorption: the fluid therefore accumulates in the intestine and acts as a mechanical purgative. If water be withheld from the diet for one or two days, purgation will not follow the administration of the salt. Usually the amount of water accumulating in the intestine under the action of a saline cathartic corresponds to the amount of water required to form a five or six per cent. solution: if therefore a solution of this strength is given, it does not increase in bulk. The weaker the solution, the more rapidly does the fluid accumulate in the alimentary canal, and consequently the sooner does purgation follow. When the salt is administered in the usual manner, it appears in the case of sulphate of magnesia and sulphate of soda to become split up in the small intestine, the acid being more rapidly absorbed than the base, and again returning to the alimentary canal. It is the salt remaining in the intestine which excites secretion, the absorbed or excreted acid exerting no such action whilst in the blood or during the process of excretion. The salt does not purge when injected subcutaneously or into the blood, and does not excite intestional secretion unless as a consequence of the local disturbance which follows the injection. The sulphate of soda is not poisonous when injected into the blood; the sulphate of magnesia is, however, powerfully toxic.

MUSICAL MURMURS OF THE HEART.

BY HUGO ENGEL, M.D.

MAY 6, 1882, A. S., æt. 51, weissbeer-brewer, came to my office for professional advice. Family history obscure; personal history as follows. Never had malaria, no constitutional lues, no scrofula. Five or six times he had been affected with blennorrhœa of a specific character; he believed himself even now not to be free from it, notwithstanding that he was married and the father of ten children, and although he had not committed adultery for a number of years. Twice had he suffered from acute articular rheuma-

tism; during the last attack, some five years ago, on the sixth day of the malady, he had been suddenly seized with great difficulty of breathing, an intense pain in the region of the heart, and vomiting; a peculiar anxious feeling had come over him, as if he were going to die, and he had felt a restlessness almost unbearable. His physician had told him that the rheumatism had affected his heart. All his present symptoms he dated from that time.

He, since, had never been free from pains, either in his shoulders or in his hips, in his wrists or in his ankles. There was always some pain at some one of these localities. But he had noticed one remarkable fact: whenever he observed a discharge from his urethra the pains ceased, to return immediately on the discharge ceasing. He suffered a great deal from dyspepsia, had sour eructations, a sensation of a heavy weight in the epigastrium, no appetite, and complained of flatulence which was so severe that he was often attacked by colicky pains, yielding only when he was relieved of the gas. His most annoying symptom, however, was dyspnœa: this came on at the least exertion, after a mental excitement, and at night, when for a number of hours it prevented him from sleeping. He was constipated; there would often have been no motion of the bowels for a week if he had not taken a purgative. St. Germain tea (a composition consisting mainly of senna-leaves) was his usual remedy. Palpitation of the heart troubled him often. Sometimes he had giddy sensations, when generally it seemed to him as if he were going to faint.

Status præsens.—The patient is about six feet tall, of very bony but slim appearance; has a cachectic look. The skin of his face has a great similarity to parchment, and is clammy. The urine contains a moderate amount of albumen, no tube-casts, no sugar; the pulse is characteristic of aortic disease. His tongue is flabby and coated. On percussion, liver and spleen are found to be slightly enlarged, the stomach dilated, the abdomen unusually tympanitic, distended by gas; the lungs are normal as regards percussion-resonance. The heart is increased in width on both sides, more on the left; the impulse is felt over several interspaces, and is slightly heaving. On palpation, between the second and third ribs, to the right of, or rather under, the sternum, a peculiar sensation is imparted to the palm of the hand: it is somewhat like the purring of a cat, but with a larger wave of the single pur, if I may thus express it; it seems to be synchronous with the beat of the heart, with the systole. On auscultation, some râles are heard over the chest, indicating some mild bronchial trouble. There is a murmur to be perceived over the heart; its point of greatest intensity is between the second and third ribs, directly under the sternum, near its right edge, and nearer to the second rib. The murmur takes the place of the first sound.

The most interesting phenomenon, however, is a peculiar musical sound, like whistling in a high octave. It appears at the end of the murmur, or, to state it perhaps more correctly, the harsh murmur ends in this whistling. The latter is so loud, so distinct, that at a distance of a little over three feet from the patient in a quiet room it can plainly be perceived.

I made the diagnosis of insufficiency of the aortic valve, with dilated hypertrophy, but the latter ceasing to be compensating and the final end being near. Regarding the musical sound, I imagined that a fine sinew-band, the result of the endocardial inflammation from which the patient had suffered during his second and last attacks of acute articular rheumatism, was attached somewhere to the wall of the aorta near its semilunar valves, that this sinew became stretched at the moment when the blood, after having, during systole, been driven through the semilunar valves, and obeying the elastic recoil of the walls of the aorta, was regurgitating, and that in this manner, the return-flow of the blood stretching the fine sinew, the musical sound was produced. If we remember that a very slight atheromatous thickening, the least syphilitic or other excrescence impeding the flow of the blood, may cause the harshest murmur all over the heart, why should not a fine elastic and thin membrane just as well obey the law of sounds and create, when stretched, a musical note? Certainly this reasoning was based upon knowledge of what had been found at the post-mortem of other cases; but of that later.

The man lived nine weeks longer. During the last three days, which the patient was able to pass in the recumbent position (before he had been half sitting), the musical sound disappeared and the murmur became less loud and less harsh. I think all these facts—the possibility of resting in the recumbent position, the disappearance of the whistling, and the diminution of the murmur—were due to one and the same cause. The circulation had decreased so much in activity, had become so weak, that respiration was less disturbed, and the current of blood had not sufficient force left to cause the former variations of sound.

At the post-mortem examination I found what, after the description given above, one had reason to expect. Nothing was, therefore, of any interest except the condition

of the aortic valves. And here the following was met with. The posterior pocket had become totally adherent, and from its nodule a very fine, sinew-like, fibrous band stretched itself to the farther end of the pocket on the right side, to which it was attached. It was white and shiny as the valve itself, and, when I saw it, it hung down loose; but I could well imagine how, under the circumstances mentioned before, the regurgitating current of the blood caused the membrane to stretch, and produced by the ensuing vibrations of the latter the whistling sound.

The fact that such musical sounds may originate in the heart without other anatomical alterations causing them than abnormal fibrous bands was first demonstrated by Hamerujk.* Formerly it was thought that such sounds could be produced only in the arteries. Laennec makes this statement, and adds that he himself has never met with such a *bruit* in the heart; under *souffle musical* he evidently classed not only the sounds caused in the arteries by compression, but also those we so frequently hear in veins. In later times, many such cases of musical sounds in the heart have been reported, but the subject was dropped, until Prof. Schroetter, of Vienna,† in a highly interesting article has again drawn the attention especially of clinicians to this phenomenon.

From a diagnostic point of view, these sounds are of importance to physicians, and, as English medical literature has recently contained very little on this subject, we will mention succinctly what at present is known about it, and add the latest researches of Schroetter.

Bamberger was the first of the great German authorities to adopt Hamerujk's view that these musical sounds are caused by the vibration of these abnormal fibrous bands (*Sehnenfäden*), and Schroetter, who has done a great deal to clear up such difficult questions, thinks that the acoustic character of the phenomenon is proof of the assertion. These sounds are always like a very high-keyed whistling, or oftener like whistling in the highest octave possible, and may be compared to the sound produced by the string of a violin vibrating when at its greatest tension. Usually the sound is heard over the left ventricle at the moment of systole.

Küchenmeister endeavored to explain the phenomenon by the serous infiltration of the chordæ tendineæ and the papillary muscles. The facts are opposed to this view: such conditions alone have never been known to cause the sound,‡ and the law of acoustics would never explain it; the infiltration would bring the normal sound a few octaves deeper. The objection raised by Friedreich that fibrous bands stretched across the ventricular cavity would relax in consequence of the diminution in the lumen of the latter during systole, and could, therefore, not originate a sound, is refuted by Schroetter, as follows: (1) Other anatomical changes are not present to explain the phenomenon; (2) the character of the sound, which could only be produced by the vibration of a very fine membranous tissue, such as a thread; (3) the fibrous band is by no means stretched transversely, but is bent at the moment of systole more or less upwards; (4) the sound is not always equally loud, because the vibrating membrane does not invariably assume the position most favorable to its production; (5) the phenomenon disappears as soon as the fibrous band becomes torn. I can add another point to this argument, which seems utterly to have escaped the sagacity of the two eminent disputants: a current of blood of sufficient strength to cause any loud sound by passing over so small a membrane and in so small a space as the valves occupy in the ventricles, a current forcible enough to produce a harsh murmur when flowing over a small vegetation, will surely be able of itself to create a tension in so small a band as these fibrous strings always are; the *vis a tergo* pushing the first part of the fluid, the pressure behind it will force the membrane to stretch; the remainder of the fluid, obeying the same impetus, brings out the sound. In proof of this, I refer to my own case. The fibrous band was three months before death the same as two days before; but the force of the blood-current was reduced nine-tenths; and, as a consequence, the musical sound ceased.

In support of the argument of Schroet-

* Med. Jahrb., Wien, Bd. xliv, 1843.

† Prof. Schroetter, Vienna, Wiener Med. Blätter, No. 1, 1883. The historic facts and the theoretical views of the authors cited, as well as the professor's own valuable observations, the writer has translated from the original article.

‡ I have not been able, in the literature on this subject at my command, to detect a single instance where a musical sound had been produced and the infiltration mentioned found as the only cause of the phenomenon.

ter, he mentions the following case, which Zuckerkandl published years ago. Over the left ventricle of a man, æt. 40, there was heard, besides a systolic, blowing murmur, a highly musical sound, which could best be compared to a whistling. Diagnosis: a fibrous band stretched across the ventricular cavity. Prosector Prof. Scheuthauer made the post-mortem. Schroetter had specially called his attention to the probable existence of the band, so that the latter during dissection should not be torn,—an accident that happens only too easily, and that is almost sure to take place if not guarded against. In the left cavity, in fact, was found the finest fibrous band imaginable, twenty-five millimetres long, stretching from the anterior to the posterior wall, and, with the exception of its two ends, which were tightly adherent to the endocardium, hanging free in the ventricle.

Many cases have since (seventeen years ago) been noted by Prof. Schroetter and others* where a systolic musical murmur of high pitch was perceived over the left ventricle, and where a fibrous band in a favorable position to originate such a sound was proved to have been the cause of the latter. That in consequence of endocarditis one end of a tendinous band may be torn off, and, carried along by the blood-current, become adherent at the opposite side, cannot be denied; my own case, perhaps, is an evidence of this fact.

Schroetter's views were of the kind related, till recently, during a visit at the Vienna Institution for the Insane,† he perceived a musical murmur in a patient as soon as he brought his head near the chest. Thinking of a possible fibrous band, he examined more carefully, and found that the murmur in this case happened during diastole, and, to judge from its point of greatest intensity, was located at the aortic valve. As all the usual symptoms and signs pointed to aortic insufficiency, he attributed the existence of the musical sound to the same lesion, without being able to give an explanation of the peculiar timbre of the *bruit*. Some time later, he saw the patient again,—moribund. The post-mortem demonstrated the insufficiency of the aortic valve; the atheromatous process being most strongly developed at the root of the vessel, the three semilunar valves were decidedly thickened at their free margin, and the one on the right side had become adherent to the one in the middle.

The closer inspection of the diseased valve brought to view the fact that the posterior pocket was perforated in its free edge, and in such a manner that upwards and from right to left, gradually becoming thinner, a very fine border, actually filiform, ten millimetres long, was totally separated from the remainder of the pocket. He had, therefore, here not to do with an abnormal, fibrous new formation, which, as a result of an inflammation with plastic exudation, had become organized and finally adherent, to form a fibrous band of adhesion; but a minute part of a normal tissue, the latter, however, diseased, had by a morbid process become separated, and so effectually that it served perfectly the purposes herein indicated of such a fibrous band.

Schroetter believes‡ that this fibrous thread in the opening left free by the insufficiency of the aortic valves, and at the moment diastole commenced, was set vibrating in the regurgitating current of the blood, and in consequence of its thinness caused the musical sound of so high a pitch. As a further proof of the correctness of this view is mentioned the fact that the thread was longer than the right edge of the pocket, and that it was bent at an angle near its left end. The thread was therefore, in Schroetter's opinion, drawn out to its full length and brought into highest tension undoubtedly only at times, surely, however, during the act of diastole, or rather at the moment the latter set in.

Prof. Schroetter since has occasionally had the opportunity of hearing the same musical sound, but not of verifying his diagnosis by a post-mortem. My own case was then not published, though the winter before Mr. S. came to my office he had presented himself at my clinic, and, as I then was lecturing on diseases of the heart, I introduced the case to the class as one of aortic insufficiency, in which probably in some way a fine adhesion, elastic in character, had formed and given rise to the musical phenomenon. I then gave the fol-

* How little attention has been paid in our country to the origin of musical murmurs caused in the manner described, may be judged from the fact that Da Costa in his "Medical Diagnosis" (fifth and latest edition) makes no mention of it.

† Wiener Irrenanstalt.

‡ Vide Allgem. Med. Central Zeitung, No. 6, 1883, page 71, where the investigations of Prof. Schroetter are reported from the source cited above, and which served as original for the parts translated.

lowing explanation. We all know that a flapping noise sometimes is perceived in aortic valvular lesions. This is caused by a semilunar valve being torn in such a manner as to allow the free end to be wafted to and fro by the blood-current. A little reflection might show that if the torn-off end is very fine, and becomes adherent to the opposite side, a new sound will be produced, and, according to the law of acoustics and of analogy, any sound during systole, if caused by a fibrous band in the ventricle, will be a musical sound and in a high octave,—the conditions, an elastic substance, thin, of certain length, adhering only at the ends, and in a position to be in the way of the current, being known to exist.

Theory and practice would here seem to agree. But a negative case, in which during life the usual scraping murmur during diastole was heard over the seat of the aortic valve, has added, according to Schroetter, another proof.* On the posterior valve towards the right side a large perforation was formed, terminating upwards in a slender thread six millimetres in length. Why was there not here heard a musical murmur, and the more so as no special roughness existed? The right and posterior valves were adherent to each other by a strong bridge; in consequence of this, the fibrous thread passed through the *sinus Valsalvæ* of the posterior valve, and could, therefore, not be set into vibration by the blood-current regurgitating back to the left ventricle.

Besides my own case, in which I preferred, however, to give a slightly different explanation by supposing the *normal* regurgitation to have caused the vibration, and the latter to have induced the *post-systolic* musical sound, or—if preferred—the *prediastolic*, other observations have proved the correctness of Prof. Schroetter's statements. He mentions the following cases himself in support of his assertions:

Oettinger perceived over the aorta of a fifteen-year-old boy immediately after systole a prolonged, almost musical, sound, like the humming of a bass-viol, terminating sharply at the beginning of the perfectly pure diastolic sound. No post-mortem; but several fibrous bands were supposed by Oettinger to have been stretched across the orifice of the aorta.

Archer heard over the aortic valve a musical sound during systole. The necropsy showed a tendinous string stretched from the nodulus Arantii of the left semilunar valve across the aorta and adhering to the opposite wall.

September 23, 1882, a patient in Schroetter's ward had a prolonged scraping diastolic murmur over the aorta. The symptoms for which the patient had sought alleviation in the hospital improved, and he went away, to return, however, three weeks later. The murmur had meanwhile undergone a remarkable change. In the middle of it could be perceived a "beautiful musical sound of high pitch." At the post-mortem the left semilunar valve was found cicatricially contracted and retracted, the right covered with excrescences, partly of areolar, partly of calcareous nature, in its commissure bound down; the posterior valve perforated in such a manner that upwards a border was left free which was sixteen millimetres long, nearly one and a half millimetre wide, and totally separated from the lower part of the pocket; fresh endocarditic vegetations covered it all over.

There can be no doubt about Schroetter's being correct in his supposition that the musical nature of the organic murmur in this case developed itself when in consequence of a recent attack of endocarditis the semilunar valve became perforated, so that a part of it, slender and elastic, while its two ends were still attached to allow of tension, could by itself swing in the blood-current, and, being set in vibration, cause the musical sound.

The more we are able to present to our mind a clear picture of a morbid lesion, the more readily we can interpret any symptom or sign; the more we appreciate the importance of an exact diagnosis in its details, the more rapid our progress in therapeutics will be, and the more definite and reliable our prognosis, especially *quoad vitam* and concerning the mode of death. The more fully this course is followed, the quieter will be our conscience in the conviction that what in a given case human ingenuity could achieve has been done faithfully and without wavering, and that, with regard to diagnosis, therapeutics, and prognosis, there was no doubt at any period of the case.

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* Loc.cit., p. 86, No. 7.

CLINICAL ASPECTS OF CEREBRAL SYPHILIS.

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(*Read before the College of Physicians of Philadelphia, February* 6, 1884.)

IN the present article I propose to say very little in regard to the lesions of cerebral syphilis, only making such allusions as are necessary to the clinical study. So much practical importance attaches to the etiological relations of the disorder that I shall discuss these at some length.

We do not know why syphilis attacks one portion of the brain rather than another in any individual case; indeed, very rarely can we give any sufficient explanation why the brain is affected at all.

It is naturally to be expected that any cause of ordinary brain-inflammation would, when present in a syphilitic person, tend to precipitate a specific cerebral disease. Thus, as thermic fever frequently provokes chronic meningitis, much plausibility attaches to the report of a case in the *Journ. de Méd. et Chir. prat.*, Paris, 1879, p. 291, where the cerebral syphilis is ascribed to a sunstroke. Blows and other traumatisms would, in a similar manner, be supposed to figure largely as exciting causes of brain syphilis; but I have never met with a case having such relations, and reports of them are rare in literature. The only records I have found are the cases reported by Dr. Broadbent, *London Lancet*, 1876, ii. p. 741, and a small collection in Heubner's article on Nervous Syphilis, in Ziemmsen's Cyclopædia, xii. 301. I have seen two cases of presumably traumatic spinal syphilis,—one in which a polio-myelitis* followed a fall on the ice, and one in which, after a fall from a cart and marked spinal concussion, a local myelitis developed. (*Univers. Hosp. Dispen. Service Book*, x., 1875, p. 58.)

Various authorities attach much influence to over-study and other forms of cerebral strain in exciting brain syphilis. Engelstedt is stated to have reported cases having such etiological relations, and Fournier (*La Syphilis du Cerveau*) affirms that he has especially seen the disease in professional men and other persons habitually exercising their brains to excess. Neither in private nor in public practice have I met with any instance where over-brain-work could be considered a distinct etiological factor, whilst the wards of the Philadelphia Hospital and the roll of the University Dispensary are full of cases occurring in persons who use not at all the modicum of brains nature has endowed them with. So far as my observation goes, cases of brain syphilis in which any exciting cause can be found are very rare.

The inherited diathesis is less prone to manifest itself in the nervous system than in other portions of the body, but it certainly is capable of causing every type of nervous disease that follows infection from impure coition.

As early as 1779, Dr. Joseph Glenck (*Doctrina de Morbis Venereis*, Vienna) reported a case of a girl, six years old, cured by a mercurial course of an epilepsy of three years' standing, and of other manifestations of hereditary syphilis. Graefe found gummatous tumors in the cerebrum of a child nearly two years old. (*Arch. f. Ophthalm.*, Bd. i., erst. Abth.) Prof. O. Heubner (*Virchow's Archiv*, Bd. lxxxiv. 269) details the occurrence of pachymeningitis hæmorrhagica in a syphilitic infant under a year old. Dr. Hans Chiari (*Wien. Med. Wochenschrift*, xxxi., 1881, 17) reports a case in which very pronounced syphilitic degeneration of the brain-vessels was found in a child fourteen months old. Both Dr. Barlow (*Lond. Patholog. Soc. Trans.*, 1877) and Dr. T. S. Dowse (*The Brain and its Diseases*, vol. i. p. 76) report cases of nerve syphilis in male infants of fifteen months.

It is a matter of great interest to know how late in life nervous disease from inherited taint may develop. We have as yet little light upon the equally interesting and cognate problem as to how far inherited syphilis may produce late in life nervous diseases whose type is not distinctly specific; but it is probable that even after puberty specific nervous affections may appear for the first time in the unfortunate offspring of syphilitic parents. Mr. Nettleship reports (*Trans. Lond. Path. Soc.*, xxxii. 13) the development of a cerebral gumma in a girl of ten years, and Mr. J.

* In this case the man had symmetrical specific skin eruptions upon the arm, and the symptoms were peculiarly symmetrical; great coldness of both forearms; excessive sweating of the palms; loss of power, so much more pronounced in the extensors than elsewhere that the patient had been treated for lead-poisoning, and great wasting of the extensor muscles. Evidently a symmetrical syphilis chiefly confined to the anterior spinal cornua.

A. Ormerod (*ibid*,, p. 14) of a tumor of the median nerve (probably gummatous) in a woman of twenty-three, both the subjects of inherited syphilis. Dr. Thomas S. Dowse (*loc. cit.*, p. 71) details a case of cerebral gumma at the age of ten years, and Dr. Samuel Wilks (*Lectures on Dis. of Nerv. Syst.*, Philad., 1878, p. 333) one of epilepsy from inherited taint in a boy of fourteen. Dr. I. Hughlings Jackson reports (*Journ. Ment. and Nerv. Diseases*, 1875, p. 516) paraplegia with epilepsy in a boy of eight, hemiplegia in a girl of eighteen, and in the *Brit. Med. Journal*, May 18, 1872, hemiplegia in a woman of twenty-two; the nervous affection in each case being associated with or dependent upon inherited syphilis. Dr. E. Mendel reports (*Archiv f. Psychiatrie*, Bd. i. 313) a case of a child who had inherited syphilis, and developed in her fifteenth year a maniacal attack with hallucinations.

Some time since, I saw, in an orphan of fourteen, a chronic basal meningitis, and, in the absence of any history, gave the fatal prognosis of tubercular disease, but to my astonishment, under the long-continued use of iodide of potassium, complete recovery occurred. No signs of inherited syphilis were perceptible, but the specific nature of the inflammation is, in view of the result, scarcely doubtful. It is probable that in some of the reported cases of alleged recovery from tubercular meningitis the affection has really been syphilitic.

The relation of inherited syphilis to idiocy appears to be a close one. What *rôle* the diathesis has in the production of those cases which are dependent upon arrest of development we have no way at present of knowing, but that it very frequently causes chronic hydrocephalus seems to be well established. A number of cases have been reported; they have been collected by Dr. E. Mendel, *Archiv f. Psychiatrie*, Bd. i. 309. For a very important paper, see also *Virchow's Archiv*, Bd. xxxviii. p. 129.

Nervous diseases following acquired syphilitic infection certainly belong to the advanced stages of the disorder. Heubner reports (Ziemmsen's Cyclopædia, xii. 298, New York edition) a case in which thirty years elapsed between the contraction of the chancre and the nervous explosion. I have seen a similar period of thirty years. Fournier reports intervals of twenty-five years, and thinks that from the third to the tenth year is the period of maximum frequency of nerve-accidents.

The fact that cerebral syphilis may occur many years after the cessation of all evidence of the diathesis is one of great practical importance, especially when taken in conjunction with the circumstance that the nervous system is more prone to be attacked when the secondaries have been very light than when the earlier manifestations have been severe. I have repeatedly seen nerve syphilis in persons whose secondaries have been so slight as to have been entirely overlooked or forgotten, and who honestly asserted that they never had had syphilis, although they acknowledged to gonorrhœa or to repeated exposure, and confessed that their asserted exemption was due to good fortune rather than to chastity.

To show that my experience is not peculiar, I may be allowed to make the following citations. Dr. Dowse (*The Brain and its Diseases*, London, 1879, vol. i. p. 7) says, "Often have I had patients totally ignorant of having at any time acquired or experienced the signs or symptoms of syphilis in its primary and secondary stages, yet the sequelæ have been made manifest in many ways; particularly in many of the obscure diseases of the nervous system." Dr. Buzzard (*Syphilitic Nervous Affections*, London, 1874, p. 80) reports a case of nervous syphilis where the patient was unconscious of the previous existence of a chancre or of any secondaries. Prof. Rinecker also calls attention (*Archiv f. Psychiatrie*, vii. p. 241) to the frequency of nervous syphilis in persons who afford no distinct history of secondary symptoms.

This frequent absence of history of specific infection is of great practical importance, and has led me to attach comparatively little weight to the statements of patients. In private practice I usually avoid asking questions which might bring up from the past unpleasant memories, and arrive at the diagnosis by studying the symptoms present.

Although syphilis is most prone to attack the nervous system many years after infection, it would be a fatal mistake to suppose that brain-disease may not rapidly follow the occurrence of a chancre. What is the minimum possible intermediate period we do not know, but it is certainly

very brief, as is shown by the following cases of this so-called precocious cerebral syphilis. Dr. Alfrik Ljunggrén, of Stockholm, reports (*Archiv f. Dermatol. und Syphilis*, 1870, ii. p. 155) the case of H. R., who had a rapidly-healed chancre in March, followed in May of the same year by a severe headache, mental confusion, and giddiness. Early in July H. R. had an epileptic attack, but he was finally cured by active anti-syphilitic treatment. Although the history is not explicit, the nervous symptoms appear to have preceded the development of distinct secondaries other than rheumatic pains.

Davaine is said (Buzzard, *Syphilitic Nervous Affections*, London, 1874) to have seen paralysis of the portio dura "a month after the first symptoms of constitutional syphilis." Dr. E. Leyden (*Zeitschrift f. Klin. Med.*, Bd. v. 165) found advanced specific degeneration of the cerebral arteries in a man who had contracted syphilis one year previously. Dr. R. W. Taylor details a case in which epilepsy occurred five months after the infection (*Jour. Nervous and Mental Dis.*, 1876, p. 38). In the case of M. X., reported by Dr. Ad. Schwarz (*De l'Hémiplégie syphilitique précoce*, Inaug. Diss., Paris, 1880), headache came on the fortieth day after the appearance of the primary sore, and a hemiplegia upon the forty-sixth day. S. L. (*ibid.*) had a paralytic stroke without prodromes, six months after the chancre. A. P. L. (*ibid.*) had an apoplectic attack seven months after the chancre: A. S., one five months after her chancre. In a case which recently occurred in the practice of Dr. A. Sydney Roberts, of this city, the chancre appeared after a period of incubation of twenty-six days, and two months and eight days subsequent to this came the first fit; eight days after the first the second convulsion occurred, with a distinct aura, which preceded by some minutes the unconsciousness. The further details of this case are not germane to the present discussion, which only requires the additional statement that the attack developed into an unmistakable cerebral syphilis with temporary aphasia, and that convalescence was finally secured by active anti-syphilitic treatment. As the first paroxysm came on without warning, whilst the man was fishing in the sun, it is not unwarrantable to suppose that a precocious cerebral syphilis was in this case precipitated by exposure to the ordinary causes of sunstroke. This list of cases might be much extended, but it certainly is sufficient to show that cerebral syphilis occurs not very rarely within six months after infection, and may be present in two months.

An interesting observation in this connection is that of Dr. Ern. Gaucher (*Revue de Méd.*, 1882, ii. 678) of a spinal syphilis occurring six months after the appearance of a chancre.

Syphilographers are in accord in regard to the existence of two pathological varieties of brain syphilis, while some authorities believe in a third form. The most common seat of attack is the membranes; next to these are the brain-vessels; while, as already intimated, there is a difference of opinion as to whether the disease ever directly affects the brain-tissue. Reasons will be given later on for believing that the brain-substance may suffer violence from syphilis; but I shall first discuss the clinical aspects of specific disease of the membranes.

DISEASE OF BRAIN-MEMBRANES.

Specific affections of the brain-membranes very often declare themselves with great suddenness. The records of the disease present case after case in which an apoplectic attack, a convulsive paroxysm, a violent mania, or a paralytic stroke has been the first detected evidence of syphilitic cerebral disease. On the other hand, in many instances the symptoms come on slowly and successively. Proper treatment, instituted at an early stage, is usually successful, so that a careful study of these prodromes is most important. They are generally such as denote cerebral disturbance, and, although they should excite suspicion, are not diagnostic, except as occurring in connection with a specific history or under suspicious circumstances.

Headache, slight failure of memory, unwonted slowness of speech, general lassitude, and especially lack of willingness to mental exertion, sleeplessness or excessive somnolence, attacks of momentary giddiness, vertiginous feelings when straining at stool, yelling, or in any way disturbing the cerebral circulation, alteration of disposition,—any of these, and *a fortiori* several of them, occurring in a syphilitic subject, should be the immediate signal of

alarm, and lead to the examination of the optic disks, for in some cases the eye-ground will be found altered even during the prodromic stage. Of course, if choked disk be found, the diagnosis becomes practically fixed; but the absence of choked disk is no proof that the patient is not suffering from cerebral syphilis. In regard to the individual prodromic symptoms, my own experience does not lend especial importance to any one of them; although, perhaps, headache is most common. There is one symptom which may occur during the prodromic stage of cerebral syphilis, but is more frequent at a later stage,—a symptom which is not absolutely characteristic of the disease, but which, when it occurs in a person who is not hysterical, should give rise to the strongest suspicion. I refer to the occurrence of repeated, partial, passing palsies. A momentary weakness of one arm, a slight drawing of the face disappearing in a few hours, a temporary dragging of the toe, a partial aphasia which appears and disappears, a squint which to-morrow leaves no trace, may be due to a non-specific brain tumor, to miliary cerebral aneurisms, or to some other non-specific affection; but in the great majority of cases where such phenomena occur repeatedly, the patient is suffering from syphilis or from hysteria.

The first type or variety of the fully-formed syphilitic meningeal disease to which attention is here directed is that of an *acute meningitis*. I am much inclined to doubt whether an acute syphilitic meningitis can ever develop as a primary lesion; whether it must not always be preceded by a chronic meningitis or by the formation of a gummatous tumor; but it is very certain that acute meningitis may develop when there have been no apparent symptoms, and may, therefore, seem to be abrupt in its onset. Some years ago I saw, in consultation, a man who, in the midst of apparent health, was attacked by violent meningeal convulsions, with distinct evidences of acute meningitis. He was apparently saved from death by very heroic venesection, but after his return to consciousness developed very rapidly a partial hemiplegia, showing that a latent gumma had probably preceded the acute attack. On the other hand, an acute attack is liable at any time to supervene upon a chronic syphilitic meningitis. At the University Hospital Dispensary, I once diagnosed chronic cerebral syphilis in a patient who the next day was seized with violent delirium, with convulsions and typical evidences of acute meningitis, and died four or five days afterwards. At the autopsy an acute meningitis was found to have been engrafted on a chronic specific lesion of a similar character. In the case reported by Dr. Gamel (*Tumeurs gommeuses du Cerveau*, Inaug. Diss., Montpellier, 1875), in which intense headache, fever, and delirium came on abruptly in an old syphilitic subject and ended in general palsy and death, the symptoms were found to depend upon an acute meningitis secondary to a large gumma.

In this connection may well be cited the observation of Dr. Molinier (*Revue Méd. de Toulouse*, xiv., 1880, 341), in which violent delirium, convulsions, and coma occurred suddenly. A very curious case is reported by Dr. D. A. Zambaco (*Des Affections nerveuses syphilitiques*, Paris, 1862, p. 485), in which attacks simulating those of acute meningitis appear to have been produced in a man with cerebral gummatous tumor by a malarial complication. In such a case the diagnosis of a malarial paroxysm could only be made by the presence of the cold stage, the transient nature of the attack, its going off with a sweat, its periodical recurrence, and the therapeutic effect on it of quinine.

In the cases of *chronic meningeal syphilis* which have come under my observation, most usually after a greater or less continuance of prodromes, such as have been mentioned, epileptic attacks have occurred with a hemiplegia, or a monoplegia, which is almost invariably incomplete and usually progressive; very frequently diplopia is manifested before the epilepsy, and on careful examination is found to be due to weakness of some of the ocular muscles. Not rarely oculo-motor palsy is an early and pronounced symptom, and a marked paralytic squint is very common. Along with the development of these symptoms there is almost always distinct failure of the general health, and progressive intellectual deterioration, as shown by loss of memory, failure of the power to fix the attention, mental bewilderment, and, perhaps, aphasia. If the case convalesce under treatment, the amelioration is gradual, the patient travelling slowly up the road he

has come down. If the case end fatally, it is usually by a gradual sinking into complete nerve-paralysis, or the patient is carried off by an acute inflammatory exacerbation, or, as I saw in one case, amelioration may be rapidly occurring, and a very violent epileptic fit produce a sudden asphyxia. In this form of cerebral syphilis, death from brain-softening around the tumor is not infrequent; but a fatal apoplectic hemorrhage is rare.

The clinical varieties of cerebral meningeal syphilis are so polymorphic and kaleidoscopic that it is almost impossible to reduce them to order for descriptive purposes. Prof. Fournier separates them into the cephalic, congestive, epileptic, aphasic, mental, and paralytic, but scarcely facilitates description by so doing. Heubner makes the following types:

"1. Psychical disturbances, with epilepsy, incomplete paralysis (seldom of the cranial nerves), and a final comatose condition usually of short duration.

"2. Genuine apoplectic attacks, with succeeding hemiplegia, in connection with peculiar somnolent conditions, occurring in often-repeated episodes; frequently phenomena of unilateral irritation, and generally at the same time paralyses of the cerebral nerves.

"3. Course of the cerebral disease similar to paralytica dementia."

In regard to these types, the latter seems to me clear and well defined, but contains those cases which I shall discuss under the head of cortical disease.

Meningeal syphilis as seen in this country does not conform rigidly with the other asserted types, although there is this much of agreement, that when the epilepsy is pronounced, the basal cranial nerves are not usually paralyzed, the reason of this being that epilepsy is especially produced when the gummatous change is in the ventricles or on the upper cortex. In basal affections, the epileptoid spells, if they occur at all, are usually of the form of petit mal; but this rule is general, not absolute. The apoplectic somnolent form of cerebral syphilis, for some reason, is rare in this city; and it seems necessary to add to those of Prof. Heubner's a fourth type to which a large proportion of our cases conform. This type I would characterize as follows:

4. Psychical disturbance without complete epileptic convulsions, associated with palsy of the basal nerves and often with partial hemiplegia.

(To be continued.)

ON THE VALUE OF NATURAL COMPARED WITH ARTIFICIAL REMEDIES IN THE TREATMENT OF DISEASE.

BY ROBERT R. TAYLOR, M.D.

SEEING in one of our late medical journals the report of a case of severe hemorrhage from the kidney successfully treated by an unusual remedy, I thought I would report several cases of disease of a grave nature which came under my observation last summer at Capon Springs, which were treated successfully by a natural, if not an unusual, remedy.

Case I.—A married lady, about 28 years of age, the mother of one child, born after a lingering and difficult labor, to which the cystitis may have been due, consulted me on account of chronic inflammation of the bladder of two years' standing. She had been treated by several physicians in Pittsburg *secundum artem*, but without any permanent benefit, the disease growing constantly worse. Being advised by her attending physician, she determined to try Capon water, and came to the Springs about July 1. When she consulted me, her general appearance was pale and anæmic; she was suffering almost constant pain, and had no relief except from laudanum enemata thrown into the bladder. She passed water frequently, which was loaded with pus and mucus, and was, as she said, totally unfitted for the duties of life.

I ordered her to drink freely of the water, from six to ten glasses daily, to take a daily hot bath (100° F.), with two hours' rest afterwards, to wash out the bladder every day with the water, and to abstain as much as possible from the use of the laudanum. This, with a plain, nutritious diet, was the sole treatment.

At the end of two months the patient returned home, her urine normal, with no trace of pus, only a slight one of mucus, and no need of anodynes, having gained sixteen pounds in weight. She promised to write me if she had any return of the disease. Not having done so, I presume she continues well.

Case II. was a gentleman about 35 years of age. I found him in bed, suffering intensely, having had but little sleep the previous night. He was very fleshy, weighing nearly three hundred pounds. Said he had been treated in Baltimore and other cities for

secondary syphilis, but stated that he had never had sore throat, alopecia, or condylomata, which statement was verified on physical examination. His body and limbs were covered with a scaly pustular eruption, with surrounding discoloration, but not of a copper hue. His lower extremities were much swollen and inflamed, and were the cause of his present suffering.

I ordered his limbs elevated and to be kept wet with an anodyne, saturnine, Capon-water lotion, and gave a free sulph. magnesia purge. In two days the local trouble had subsided. I then told him that my diagnosis of his case was not syphilis, but eczema pustulosum. I ordered him on strict diet, no stimulants of any kind; to drink freely of the water; to take a hot bath night and morning (100° to 105° F.), and to apply at night a vaselate of starch. At the expiration of two months this case was comparatively well, and, having to leave to attend to business, I advised him to try, if possible, to spend two weeks at the White Sulphur Springs, for the sake of the baths.

Case III.—A gentleman from New York, about 60 years of age, came to Capon on account of albuminuria in early stage. After six weeks' use of the water, all trace of albumen had disappeared from his urine, and he left for Long Branch.

I also had under observation two cases of albuminuria consequent on scarlet fever, both of which were entirely cured in three weeks.

My object in reporting these cases is to call attention to an easily-obtained natural remedy proving entirely successful where skilful physicians with the best pharmaceutical remedies had failed.

2129 PINE STREET, PHILADELPHIA.

NOTES OF HOSPITAL PRACTICE.

UNIVERSITY HOSPITAL.

CLINIC OF PROF. H. C. WOOD.

EPILEPTIFORM ATTACKS REPLACED BY SPASM OF THE FACIAL, HYPOGLOSSAL, AND SPINAL ACCESSORY NERVES—CURE.

THE first case which I have to show you to-day is one of considerable interest in many ways, and is a somewhat peculiar one.

Our patient is a colored man, who was in fair health until July last. On the 1st of July his head was suddenly drawn to the left, then the whole body became involved in contractions, and after this had continued for some time he dropped down and became unconscious. It was a primary epileptiform attack, which came on without apparent cause, and has been followed by attacks the character of which you see at present. [The patient had several of his spells during the time he was in the clinic.] His first spell he had three or four days after the epileptiform manifestation, and they have continued ever since.

During these attacks the head moves a little. There is a condition of spasm of the muscles of the left side of the face. By watching the case carefully, we find that it is the muscles of expression which are involved. He has tonic followed by clonic contractions, which affect the distribution of the facial nerve. There are two nerves which supply the face and jaws, the facial and the trigeminal,—the facial supplying the muscles of expression, while the trigeminal supplies only the pterygoid, masseter, and temporal muscles,—the muscles of mastication. The jaws appear to be quiet in the fit, and the spasm is confined to the facial nerve distribution. The whole left side of the face is in the condition of tic or spasm.

There are two varieties of tic, the painless and the tic douloureux,—the first being confined to the facial nerve, while the second involves also the trigeminal nerve, occasioning a sensory explosion at the time of motor excitement. The expression tic douloureux is sometimes used in place of facial neuralgia; but this is not an accurate use of the term, as tic is a spasm, and in pure facial neuralgia there is no spasm of the muscles.

In this case there is a forward motion of the head at the time of the spasm. There is, indeed, involvement of the sterno-cleido-mastoid muscle of the left side, and also of the trapezius muscle. In some of the more severe spells this spasm of the trapezius is quite distinct. The involvement of these muscles means implication of the spinal accessory nerve, the motor discharge passing over from the facial to the spinal accessory whenever the attack is very violent. I think that the tic also affects the tongue, but as yet I am not positive about that.

Looking at the eyes during a spasm, we do not find any reason for thinking that the motor oculi is involved. The apparent movements of the eye during the attack are entirely due to the orbicularis palpebrarum muscle, which is supplied by the facial nerve. The pupils are normal,

and the movements of the eye are not restricted.

Now, during the present attack, which is more severe than any which we have witnessed here to-day, we find one side of the tongue in a condition of hard, tonic contraction, showing involvement of the hypoglossal nerve. We have, then, involvement of three nerves,—the facial, spinal accessory, and hypoglossal.

Last night our patient was in a condition of very profound asphyxia from spasm of the glottis, due to implication of the so-called recurrent-laryngeal branches of the spinal accessory, which come out of the sheath of the pneumogastric nerve. Death was seemingly averted only by the inhalation of nitrite of amyl.

He has some pain in the tongue, but altogether it is almost a painless spasm. There is no involvement, fortunately, of the trigeminal nerve, or else life would be a burden to him. There is no movement of the jaw or striking of the teeth, as would be the case if the temporal and masseter muscles were affected.

Our patient stated that he had fourteen epileptic fits in 1871, the next year seven, followed by five, three, two, and one in each of the succeeding years. Last year he had none. There has been no impairment or change in the mental faculties.

I think that, with this history, we can come to the conclusion that the disease is not peripheral. Tic is sometimes peripheral from reflex irritation, but the involvement of these different nerves points rather to a centric disease. He has no soreness of the teeth, nor any discoverable source of irritation in the region of the trigeminal nerve. Moreover, a peripheral tic is usually painful, owing to the implication of the trigeminal nerve. I have known of one case where abscess of the frontal sinus was the cause of tic, which was relieved by perforating the bone. We must therefore always look for peripheral irritation; but we find none here. From this failure, from the painlessness and wide-spread character of the convulsions, and from the history of epileptiform fits, I believe that this man has a centric disease. He is forty years old, and has a distinct specific history.

The history of the first occurrence of the epileptic fit is obscure: there are no positive data of specific cerebral disease, but a lesion of the lower portion of the ascending frontal convolution of the right side will account for all the symptoms, which otherwise would be of a very obscure character. Specific lesions involving primarily the meninges, secondarily the brain-substance, are not rare in this position, and the disease here is probably of such nature.

The first thing to do is to make the therapeutic test; and he has been taking thirty grains of iodide of potassium three times a day without any evidence of iodism; but it has as yet failed to have much influence on the fits: he has, however, been on this treatment for but three or four days.

In my experience, a man who resists the physiological action of ninety grains daily of the iodide is very rarely affected unpleasantly by one hundred and eighty grains; and I shall accordingly increase the diurnal dose to that amount.

In regard to the spasms themselves, we could use coniine, but in order to control them it would be necessary to employ the drug in dangerous doses. The only fatal case of recent coniine-poisoning which I can at present recall was when it was used to relax facial spasm. When there is danger of approaching asphyxia from closure of the glottis, as was last night the case with this man, you must use nitrite of amyl, which is more rapid in its action and less dangerous, in my opinion, than chloroform. If the nitrite fail, open the larynx at once.

[Under the treatment indicated, the spasms become less severe, a sensible effect being produced in one week, and in three weeks the seizures had become very infrequent and very light. At the present time, January 30, 1884, there has been no spasm for six weeks; the patient is entirely free from headache and is apparently well.]

TRANSLATIONS.

RECOVERY AFTER THE PASSAGE OF A RAMROD THROUGH THE BRAIN.—Dr. G. Fischer (*Deutsche Zeitschrift f. Chirurgie*, xviii. p. 411) reports the following case, which is even more remarkable than the celebrated crow-bar case. Through the accidental discharge of a carbine while being unloaded by a young man 17 years

of age, the ramrod was driven into the back at the right side of the fourth dorsal vertebra, passed along the chest-cavity, up through the right side of the neck, entered the base of the skull, passed through the brain and vault of the cranium, and extended 30 cm. above the top of the head on the left side. The author states that the ramrod passed through the sphenomaxillary fossa, then through the right half of the sphenoidal bone, from which point a fissure extended backwards into the right optic canal, with injury of the optic nerve, and forward into the right half of the cribriform plate of the ethmoid bone; consequently, as the missile emerged from the left side of the head the left frontal lobe of the brain must have been injured. The length of the wound, from the fourth dorsal vertebra to the left frontal bone, was thirty-five centimetres; the length of the ramrod was fifty centimetres.

The first symptoms after the injury were those of concussion of the brain, while after removing the ramrod, four hours after the injury (to accomplish which, blows with a hammer were necessary), through an incision in the neck, symptoms of compression appeared, probably due to hemorrhage within the cranium. There was also transient loss of memory, and from the fourth to the twelfth day escape of cerebrospinal fluid through the left side of the nose, and on the seventeenth day discharge of pus from the right ear. Six weeks after the injury, atrophy of the right optic nerve could be detected; other symptoms were then absent.

The wound in the head was healed on the thirty-fourth day, the wound in the neck on the fifty-ninth, and the wound in the back on the sixty-sixth day. Eleven months later, with the exception of atrophy of the optic nerve, the general condition was normal. The author, however, does not regard the subsequent development of an abscess in the brain, with mental disturbance, as improbable.

Dr. Fischer has been able to find only four cases reported of injury to the brain with ramrods, and in all of them the missile entered the top of the head. Of these cases, two, those of Morand and Limbourg, occurred in the last century, one, that of Larrey, in the commencement of the present century, and the other, that of Chassaignac, in 1842.

In a fifth case, that of Hennen, a ramrod entered the brain by the patient falling on it, and caused instant death. In the case of Larrey, death occurred on the second day, from inability to remove the ramrod entire; in the case of Chassaignac the result is unknown; while the two other cases are reported as healed.—*Centralb. f. d. Med. Wissen.*, January 26, 1884. S.

Application of Strychnia to Alcoholism.—Although Giacomini pointed out a long time ago the physiological antagonism existing between alcohol and a number of poisons, and Magnus Huss applied strychnia to the treatment of certain phenomena of alcoholism, it is to Luton, of Rheims, that we owe the precise formula for the administration of this alkaloid to the different forms of alcoholic poisoning. In delirium tremens, particularly, was it found that doses which under other circumstances would be dangerously large were administered not only without bad symptoms, but with decided benefit.

Dujardin-Beaumetz (*Bull. Gén. de Thérapeutique*) declares as the result of his observation that strychnia should not be considered as the remedy for alcoholism *per se*, but as the best agent with which to combat the nervous manifestations of alcoholism,—the intoxication and delirium tremens. Since it prevents drunkenness to a large extent, it enables the individual to drink more without becoming intoxicated; but it does not prevent the ordinary degenerative changes in the viscera that are well known as being produced by alcohol. In therapeutics, strychnia, therefore, would not be valued as a remedy for alcoholism, but only as an agent to control the nervous manifestations.

Subcutaneous Injections of Chloral in Strychnia-Poisoning.—Faucon and Debierre, in a case of grave poisoning by strychnia, gave, in the course of fifty-nine hours, one hundred and twenty subcutaneous injections of chloral hydrate (aggregating fifty-eight grammes), saving the patient's life.—*Journal des Sciences Méd. de Lille;* from *Revue de Thérapeutique.*

Polypi in the Ear treated with Alcohol.—Politzer is said to obtain good results in polypi of the ear by the instillation of a few drops of warm alcohol several times a day into the external meatus. The treatment extends from a fortnight to two months. The polypi gradually shrink and disappear.—*Wiener Med. Blätter.*

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, MARCH 8, 1884.

EDITORIAL.

THE USE AND ABUSE OF VIVISECTION.

IN an editorial which appeared in these columns in the issue of March 10, 1883, upon the subject of Anti-Vivisection Agitation, an opinion was expressed that vivisection, when conducted in a proper manner, is recognized by medical science as a legitimate and necessary means of advancing research and of adding to our store of knowledge. It was further stated that it was believed that the members of the medical profession are "very generally opposed to unrestricted vivisection, and in favor of its regulation by law;" and the hope was expressed that a committee of the College of Physicians would meet those interested in this movement, in order to frame a bill that should be mutually satisfactory. In a second editorial upon this subject, which appeared in the issue of February 9, 1884, these temperate and perfectly sound views were again published, in connection with the announcement of the annual meeting of an association which had been incorporated for the express purpose of "restricting the practice of vivisection within proper limits."

In an editorial comment upon this same meeting,* one of our valued contemporaries confirms our views as to the attitude of the profession towards vivisection, by the use of the following language:

"We fully agree with those who would restrict its use within certain limits,—limits that would insure the saving of ten thousand pains to humanity for every single pain inflicted on a lower animal,—as, for instance, requiring a certain authority as a license to practise vivisection, procurable (without expense) only by those who can furnish satisfactory evidence that their physiological studies have progressed sufficiently far to make it reasonably sure that the results of their experiments on animals will redound to the good of mankind."

We are gratified to find that the editor of the *Medical and Surgical Reporter* not only entertains such views, but also has the boldness to express them. This is, certainly, the only logical ground; for all the arguments in favor of the use of anything could never warrant its abuse; and both the profession and the public certainly have a right to request that vivisection shall not be abused.

The *Medical News* has also an editorial with reference to our remarks already quoted, in which exception is taken to the sentiments above expressed; and the animus of the Anti-Vivisection Association is severely criticised.

Without assuming the right to speak for the Association in question, we may at least remark that, when it is desired to learn the objects of any incorporated association, a copy of the charter will give the necessary information, without resorting to private interviews with active and enthusiastic advocates: if the association exceed its corporate privileges, the remedy can easily be applied. We may also observe that it is always to be regretted, when one party to a controversy imputes unworthy motives and methods to those who happen to differ with it in opinion. Abuse and ridicule do not convince, nor can they supply the place of argument. It is true that Magendie's experiments were cited as illustrating an abuse of vivisection, since it was declared by Flourens that Magendie sacrificed eight thousand dogs in one series of experiments only to arrive at last at an incorrect conclusion; true, also, that these were

* The Medical and Surgical Reporter of February 16.

performed before the use of anæsthetics; but the critic neglects to state that these experiments were upon the nervous system, and were such as required consciousness upon the part of the animal experimented upon, and therefore would not be such as anæsthetics would be used in to-day; and, further, that these particular experiments were quoted not because they were painful, but because they were useless.

If it be true that the *Medical News* "years ago offered to accept such a bill as has since been passed in Great Britain," we are happy to learn of it. We believe that any community that is sufficiently enlightened to legislate for the prevention of cruelty to animals should in common consistency also prescribe the conditions under which vivisection might be permitted.

In conclusion, we will state that, as we have been authoritatively informed, the present movement does not seek to abolish or to interfere with scientific experimentation further than to urge that it be done in as humane a manner as possible. No one believes it feasible to prohibit vivisection any more than it would be possible (the comparison is borrowed from the *Medical and Surgical Reporter*) to abolish whiskey-drinking by legal enactment; but every rational person believes that vivisection, if it is to be made available at all for scientific purposes, must be conducted according to strict scientific methods. Many, who have had opportunities of investigating the subject, have declared that vivisection is overdone and is greatly abused in this country, though still to a far less extent than in Europe. For the protection of scientific vivisection, therefore, it would seem wise and proper for its defenders to declare by what methods its ends can best be secured, and to seek by appropriate legislation to prevent its abuse. Such defenders could meet in an amicable spirit their fellow-citizens who desire the restriction of vivisection within proper limits, it seems to us, without any sacrifice of dignity, and possibly with distinct gain to medical science. At the least, we feel certain that it would be so as far as concerns its standing in the estimation of the community.

THE MEDICAL COLLEGE OF VIRGINIA.

THE Medical College of Virginia, which was organized in 1838 as the medical department of Hampden-Sidney College, obtained its present name under a new charter in 1854, but classes have been graduated each year since 1840. The school, located at Richmond, has eight professors and ten adjunct professors, and appears to be doing good work.

There is a danger that its future usefulness may be permanently crippled by the passage of a mischievous piece of legislation, known as Senate Bill No. 243, now in the hands of a committee for consideration. This bill is nominally for the purpose of providing an annuity for the college, and providing for State students therein; but in fact it empowers the members of the General Assembly to nominate as many free students as there are members of the Assembly, in return for an annual appropriation of seven thousand five hundred dollars. As there is no restriction with regard to sex, color, or nationality in this bill, the friends of the school have good reason to fear that its ultimate effect will be to lower the standing of the college among medical educational institutions in this country. There appears to be an impression abroad that medical education is such a good thing that it is impossible to have too much of it; and as to the doctors, "the more the merrier."

THE final chapter of Dr. Formad's article on the "Bacillus Tuberculosis and the Contagion of Phthisis," on account of its length, has been crowded out of this issue, but will appear in our next.

NOTES FROM SPECIAL CORRESPONDENTS.

LONDON.

THE position of a correspondent is at times unsatisfactory: it may be well if only at times. But really there is just at present so little of general interest going on in the Societies or elsewhere that it is difficult to find material interesting to the reader. To be sure, a correspondent may mount one of his hobby-horses and ride far afield to his own intense satisfaction; but how far such a gambol would be deemed satisfactory to the subscribers to the excellent journal, *The Philadelphia Medical Times*, it is not desirable to speculate.

The germ-theory in some form always retains a hold upon the public mind, and the bacilli of tubercle are apparently still in vogue. A colleague of the writer's is a personal friend of Koch's, and has expounded his views on this side of the North Sea with much ability. Possibly his position on the subject is not entirely devoid of interest to some on your side of the Atlantic. He is an able physician,—there is no question about that,—and what he does and what he has got to say has a value, I will go bail for him for that. Without having made special inquiries, but taking what is going, it seems that, in the presence of tubercle, bacilli are never wanting. Whenever there is any activity going on in tuberculous growth, the characteristic bacilli are found in abundance. Extensive search has established that fact. And to one working with the microscope and familiar with the art of staining and mounting specimens, a microscopic examination of the sputum may be a ready means of determining the condition of the lung in a case where consolidation of the apex is unquestionably present. But are there not other, older, less troublesome (to the bulk of practitioners), and equally trustworthy measures of gaining the same information? Have the features of hectic fever become transformed, or has the nocturnal rise of temperature, with its up-and-down tracing, lost its significance? Does the moist râle speak with less decisive tones than it did when Laennec laid down its value? "In the latter cases [softened tubercles], the rattle has a peculiar character which I shall denominate *cavernous;* it is more than usually abundant and large, and is confined to a small space, within which we commonly observe at the same time both the cavernous respiration and pectoriloquism." Now, my colleague knows all this as well as anybody, and infinitely better than most men; but he has most faith in the diagnostic value of the bacilli. Recently a case of senile phthisis came into my wards where a large cavity existed at the upper third of the left lung. From this, at times, after severe coughing, a most offensive sputum is expectorated, quite different from his ordinary phlegm, which is inodorous. Of course, this tells of a cavity with comparatively hard, incompressible walls, where a certain amount of pressure is required to compress this firm wall and get up some of the contents of the cavity. The case could be termed one of fetid bronchitis; and a great source of trouble the poor old man with his odorous sputum is to the other patients in the ward, despite a carbolic respirator and deodorants internally. The cavity is quite too large for the hypothesis of bronchiectasis; and yet the patient, who is of a high order of intelligence, is positive about the fact of his never having been ill or troubled with a cough. It seems incredible that so large a portion of the lung could have disappeared without some derangement of the health which would have left an impression upon the patient's memory. My colleague's physical examination is superb, so he was requested to examine the patient by himself and for himself. Going into the ward just as this was completed, the answer made to the inquiry of what he thought was, "Excavation, certainly." "In the absence of any history of illness?" "Certainly. But, if you want to be sure about it, examine the expectoration for bacilli. That will settle the matter." The microscopic examination has not been made, nor is it at all certain that it will be made; but the incident tells much as to the present state of opinion upon the subject of tubercle-bacilli in a man who has thoroughly studied it and who carries a level head. The rational outcome of this faith is naturally inhalations. If the bacilli are the cause of the tubercle, then this treatment ought to be fatal to the little homicides, and the patients ought swiftly to leave all their evidences of phthisis behind them. It may be premature to anticipate the results of this experiment; but how is it that certain families manifest such decided tubercular tendencies, while others are equally exempt from them? I suppose the answer is, these bacilli are constantly being respired and find a habitat in one person's lungs and no home in another's. But, granting this, how do these minute organisms excite a cell-growth of defective vitality which experience has told us in pretty unmistakable accents is distinctly linked with an inability to assimilate fat? If the sufferer can be induced to take fat in such form as permits of its being taken up by the lacteals in the villi of the intestine, then the lesions in the lung heal up and the patient gets well. How about the bacilli then? Has the fat had the same effect upon them as the late lamented John Hughes Bennett used to assert that fat had upon the acarus scabiei, and that the addition of sulphur was quite a superfluity? That softening tubercle forms a nidus in which these bacterian rods readily live and breed seems to be a fact. But what is the relation of this par-

ticular fact to the other clinical facts of phthisis, is just what we all want to know. However, my colleague accepts the presence and the number of bacilli found in the sputum as the most trustworthy evidence of the presence of that neoplasm which Laennec called tubercle, and which he regarded as the essence of phthisis,—a view which long held its ground unshaken, but about which modern pathologists are by no means agreed. How far the tubercle-bacillus will hold its ground remains also to be seen. If it be finally decided that it only finds a suitable home to its liking in softening tubercle, then it may retain some diagnostic value; but the circumstances under which tubercular growth is favored, and the opposite conditions which are inimical to it, will still preserve the value at present attached to them. And perhaps, in critical cases, the condition of the tongue, as indicative of the state of the alimentary canal, is the most important and significant indication of all the phenomena associated with pulmonary phthisis.

The good, hard and fast rules of the examination-table are being found less and less infallible as the practitioner travels on his medical path in actual practice. When sugar was found in the urine of a patient wasting away, the hypothesis was erected that the presence of sugar in the urine was significant that the person would soon belong to the past. And it cannot be denied that the teaching of the schools is to the effect that glycosuria means diabetes, and diabetes is a malady which in no long time ends in death. Aretæus gives a clear description of the malady, and thought that the disease was "a colliquation of the flesh and limbs into urine." It was not till the time of Willis that the presence of sugar in the urine was fully recognized. Later authorities have decided that diabetes is "a disease in which a saccharine state of the urine is the characteristic symptom." Diabetes, then, is not a wasting disease in which the body is gradually starved to death by the sugar escaping by the kidneys; but the presence of sugar in the urine tells of the oncome of a wasting disease. If the last is seriously meant, then very often glycosuria lies like Ananias and Sapphira.

The other day, meeting an eminent physician and falling into chat with him while inspecting Barnum's "Toung Taloung," the so-called "white" elephant, the conversation ran on the pitfalls of practice arising for some of our cherished theories. During this turn of talk the question was put, "How do you determine in a case of glycosuria whether the patient has diabetes or not?" He looked at me with a steady, inquiring gaze, and slowly replied, "I look at him." Now, it struck me this was just about the best and the most sensible remark upon the subject that could well be made. Diabetes is a disease which prints its mark on the organism in such a way that, when its symptoms are detailed and the urine is examined and found to contain sugar, the conclusion is not far to seek. At chest-hospitals it is almost a rule to strip all the patients and examine the chest as a first preliminary, without premising one or two leading questions to the patient,—in other words, assuming that because a patient comes to a chest-hospital, therefore there is present some mischief in the chest. So, when there are "Renal Hospitals," a day not so distant as to be over the horizon, it will probably become a rule to make an examination of the urine as the first step. And when this is done, how many patients will be found to have saccharine urine? A good many more than are actually diabetic. When some apex-consolidation is found, how do we decide upon whether it is old or new? We look at the patient and ask a few questions,—at least that is my way of approaching the difficulty,—after the stethoscope has had its word (which is often an inarticulate sound); and, depend upon it, in maladies affecting the whole system, as phthisis and diabetes undoubtedly do, it is a good and sound plan "to look at the patient." The trained eye is our main guide as to the general condition of the patient and his health or ill health. When a corpulent, florid-complexioned man, well fed and vigorous, passes sugar in his urine, only a tyro could conjecture that he was the victim of the classical diabetes,—a formidable wasting disease. Between the matter of examining the sputum for bacilli in a case of lung-consolidation, to determine the precise histological condition of the neoplasm, and looking hard at a man who has perceptible quantities of sugar in his urine, lies a mighty tract of knowledge. But still it is only what a medical man must command if he has either to win the confidence of his patient or hold his own in the present battle for existence. When a patient looks haggard or worn, complains of muscular lassitude, feels his work growing too much for him, and is troubled with thirst (and sugar-thirst is infinitely less quenchable than salt-thirst), then the presence of sugar in the urine becomes of the highest significance; and, though this perhaps will be regarded as rank heresy, relaxation from labor, a diminution of the tax upon the nervous system, is more important than the shallow line of avoiding everything that can be converted in the body into grape-sugar. It may be well to give the liver physiological rest as to its glycogenic function, until it has come round; but that is not the whole of the pathology of diabetes; while the proposal of a French professor to treat diabetes by feeding the patient on the flesh of carnivorous animals was about the height of shallowness and folly.

Some time ago, a good deal was said in our medical journals about the state of medical teaching at the University of Oxford. The

enthusiasm of the late Professor Rolleston had been chilled down to zero, and the physiologist had been transformed into the archæologist, who found his highest object of interest a tumulus or an old British barrow; while physiological teaching died out practically, if not in actual fact. The medical teaching had gone the same road, and, while under Prof. Michael Foster Cambridge was pushing on in medical teaching, at Oxford it had become but the shadow rather than the substance. To remedy this state of affairs, Prof. Burdon Sanderson was induced to apply for the post of Waynflete Professor of Physiology, and was elected. He is a man of great perseverance, and one who would probably be as unconscious of being beaten if defeated as any of the Britishers of whom Napoleon complained that "when they were beaten they would not run." Since then a turn in the tide has taken place, and the proposition was soon mooted to erect the buildings requisite for proper modern physiological teaching. The decision came off on the 5th, and the opposition had taken their stand upon an anti-vivisection platform. It was proposed that a sum of £10,000 be devoted to the aforesaid object, and on this question the battle was to be fought. The opposition issued circulars to all those who were supposed to be disinclined to experimental research in Oxford, but astutely avoided those who were in favor thereof. The professor himself was not aware of what was on foot, so well was the secrecy of the movement kept, until three days before the time of decision. He at once took a vigorous step and wrote a letter to the *Times*, followed up by an urgent appeal to Oxford graduates in London. There was consequently a large assemblage on both sides. The subject was formally introduced, and Freeman, the historian, an ill-tempered, quarrelsome little body, followed. He denounced the whole subject in no slight terms, concluding "with a peroration condemning the use of the new schools for the fooleries of a ball-room, or the museum for the horrors of a torture-chamber." There was no uncertain sound about this assertion. Then Prof. Acland, a stately, imposing man, the head of medicine at Oxford, spoke, stating that the circular was misleading. It was headed "Vivisection at Oxford," and seemed to take for granted that physiological teaching meant nothing more than the infliction of pain upon animals, as Mr. Freeman assumed. What the historian had described as having been done to a live dog had really been performed on a dead frog,—a very different matter. A storm of cheers and hisses arose, and proof was demanded,—and furnished, whereupon new cheers rang out. Instead of the learned professor spending his time mainly in the infliction of pain in cruel experiments for the "pleasure and amusement" of his students, he did not even possess a license to perform experiments; and he certainly is not likely to perform them without such protection. The Professor of Medicine concluded, "I will use no hard words. Would that the anonymous committee, before it had spread these misleading statements you have read, had learned their lesson better, and taken a larger view of the world of our duty and of true humanity!"—a hope which, however fervently expressed, is scarcely likely to be realized with the present constitution of the anti-vivisectionist array. Then arose one of the anti-vivisectionists, who failed to make himself heard, though a man of no small proportions. After that another tried his hand, one of the best men in the anti-vivisection ranks, but he utterly failed to produce the desired effect upon his audience, neither justifying his position nor influencing his hearers, if the vote may be taken as the test of his success.

Then, having done their best, such as it was, the counting came on, and it was found that the "placets" numbered one hundred and eighty-eight, while the opponents were only one hundred and forty-nine, all told. It was a substantial victory, despite the measures taken to defeat the motion, taken in guile, in secrecy, and with false assertions. A prolonged burst of cheering broke out from the winning side. Then followed three cheers for Dr. Burdon Sanderson, who had led his following so skilfully. The proceedings then terminated, and the building of the requisite laboratory will at once be set about. This gives a prospect of Oxford being no longer "a lost school of medicine," which is not only a matter for direct congratulation, but the other undergraduates will see medicine in its proper position instead of its neglect as in times past, and carry away with them some just conception of what a modern medical education involves. That the theological element at Oxford will succeed in emasculating the Waynflete professor, as they certainly did the late Linacre professor, is improbable. And yet Rolleston was no weakling. He was a robust, energetic Yorkshireman. He did not look a favorable specimen of the man whose earnestness could be eaten out of him; yet the effect upon him was that of a corroding acid upon metal. The theological party (even when backed up by the anti-vivisectionist array) will have to find out some new solvent for the purpose of eating out the earnestness of the new professor, and some more skilful line of attack before they can succeed in ejecting medical teaching from the University of Oxford.

J. MILNER FOTHERGILL.

THE NEW YORK ASSEMBLY has passed a bill limiting the time of service of conductors and drivers on city railways to twelve hours a day. In Philadelphia these men work from sixteen to eighteen hours a day.

CINCINNATI.

PHYSICIANS AND DRUGGISTS.

IN your issue of February 9 you publish the rules as prepared by a committee from the Academy of Medicine, the Cincinnati Medical Society, and the College of Pharmacy. Strange to say, these rules were not adopted by the Academy because of their stringency in reference to pharmacists' prescribing, and because many of the physicians desired to prescribe proprietary articles. The discussion grew rather warm, and developed some peculiar facts. It was disclosed that many of the physicians keep their own stock of drugs, which they dispense to their patients. Many reasons were given for this. Some said that their prescriptions were frequently tampered with by the pharmacist, that substitutions were made, that old, inert drugs were used, that remarks were made by the dispenser to the patient deleterious to the prescriber. Others keep a stock of drugs on the score of economy, claiming that the profit accruing to the pharmacist is enormous. Then it was said that when a physician dispensed his own medicines, the patient could not get the prescription refilled without the consent of the prescribing physician.

The majority of the members, however, did not think that the advantages arising from keeping their own drugs would at all compensate for the disadvantages, and they thought that a skilful pharmacist was a necessity to the profession.

The rules passed the College of Pharmacy without any change, but, owing to their failure in the Academy, they are of no value.

A Children's Hospital has been endowed by a wealthy lady of the city, who has placed it in charge of Dr. Forcheimer, a gentleman of well-known ability. He has chosen as his assistants Drs. W. W. Seely, E. W. Walker, Walter Christopher, and Robert Stewart. They have secured a commodious building, with a large yard, located in the German quarter of the city. They have trained nurses in attendance, and every modern convenience for the comfort and welfare of the little sufferers. The wards are small, but well lighted and fairly well ventilated. The present capacity of the hospital is twenty-five beds, and these are full nearly all the time. The hospital is free to the poor, and no contagious diseases are admitted. Heretofore children have all been sent to the City Hospital or to the Home of the Friendless. In the latter place the attention and accommodations are quite inadequate to the proper care of the sick. A well-fitted post-mortem room is under the charge of the pathologist, Dr. Walker, and will no doubt throw much light on otherwise obscure cases. The generous patron of this children's hospital is Mrs. Maria Longworth Nichols, a sister of the late Dr. Langdon Longworth.

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A bill has been recently introduced into our State Legislature entitled "An Act to establish Boards of Health and a Medical Board of Examiners and Licensers, and regulating the Practice of Medicine and Surgery in the State of Ohio, and defining the Duties of such Boards." The bill provides for the appointment by the Governor of a Board of Health, consisting of nine physicians, "who shall be graduates of reputable medical colleges, and who have practised medicine or surgery for not less than ten years, but none of whom shall be in any manner connected with any medical school or college; provided, that in the appointment the several systems of medical practice recognized by the three State medical societies shall be in proportion of six, two, and one: that is to say, the system having the largest number of legal practitioners to have six, the next largest to have two, and the remaining system to have one." Thus a half-loaf is given to the so-called regulars, a bite to the homœopaths, and a crumb to the eclectics. The bill provides for the organization of subordinate county Boards of Health, for the prevention of epidemic and endemic diseases, and for the regulation of the practice of medicine. The members of the State Board shall constitute the Board of Medical Examiners and Licensers.

They shall meet in April and October of each year, to examine all applicants for license to practise medicine or surgery. The questions forming such examination shall be the same for each class of candidates offering themselves, with the exception of the principles and practice of medicine and therapeutics, in which branches the questions for each candidate shall be prepared by the representative in the Board of Examiners of the system of practice to which such candidates wish to be licensed.

Each candidate must be a graduate of some reputable medical college.

This bill was sent to the Cincinnati Academy of Medicine for endorsement. The discussion which it elicited proved conclusively that the bill will meet with the opposition of the college men. They find fault with any number of minor points in the bill, and wisely do not base their objections on the feature really obnoxious to them,—viz., the re-examination of their graduates by gentlemen not connected with any college. It is safe to predict that the bill as it reads will not receive the Academy's endorsement.

The firm of Williams, Ayers & Sattler, oculists, have been sued for twenty thousand dollars' damages by a former patient. The patient claims that he has become blind from sympathetic ophthalmia, because of the physicians' failure to treat him properly when he first applied to them with a foreign body in the eye. No doubt the firm will be put to some annoyance and expense, although there is no danger that their high standing as

gentlemen and physicians will be at all injured.

The annual flood of the Ohio reached the unprecedented height of seventy-one feet and three-fourths inch, or nearly five feet higher than that of last year. The extra care which will now be taken to prevent sickness will probably counterbalance the bad effects of the dampness and alluvial deposit in the submerged district. A. B. T.

February 19, 1884.

PROCEEDINGS OF SOCIETIES.

NEW YORK ACADEMY OF MEDICINE.

A STATED meeting was held February 21, 1884, FORDYCE BARKER, M.D., LL.D., President, in the chair.

THE DIFFERENCES IN FORM OF THE ADULT HEAD.

Dr. JOHN C. DALTON made some remarks upon this subject. Recently he became interested in a method of comparing the differences in form of the adult human head by means of the paper patterns of hatters. These patterns were made from models of the circumferential outline of the head on a line with the hat-band. At one of the shops where he visited there were large quantities of these patterns, and it occurred to him in looking them over that there was a great variety in the forms presented. He had three hundred and sixty of these patterns, taken from customers as they appeared in succession. Nine diagrams, representing some of the most striking variations in outline, were shown. Looking at the diagrams in a general way, there were certain variations which would strike the observer. First of all, as to general shape, there were long heads and round heads. There was a great deal of variation within certain limits in this respect. It was considered that in the medium form of head, the width stood with relation to the length in about the proportion of 100 to 125. Practically, however, the mean length ranged between 120 and 130, and, representing the width by 100, any head in which the length would be represented by a figure below 120 would be classed as a round head, and above 130 as a long head. Besides these peculiarities respecting width and length, there were also other peculiarities in form. In some cases the front portion of the head was narrower than the back portion, and *vice versa*. In some the entire outline was curvilinear, but in the great majority of cases there were angles and straight lines. Again, the two sides of the head were more or less unsymmetrical. In diagram No. 1 there would be seen a very regular, symmetrical oval. In No. 2 there was a squaring of the anterior part of the head, and the temples were flattened. This flattening of the temples existed in many cases. In No. 3 the occiput was less rounded. In one case the length was represented by 135, and in the longest of the lot the length was represented by 153. A general glance at the long head would give one the impression that the elongation consisted chiefly in the projection of the occiput. In the most nearly round diagram the length was represented by 108.

The want of regularity in the outline in the diagrams was present in all in greater or less degree, although it might not be apparent to the casual observer. It became very readily apparent, however, when the diagram was folded in the middle longitudinally. The edge of one half of the paper diagram would be seen to project irregularly beyond the corresponding part of its fellow. In some instances the want of symmetry was very pronounced, while in others it was very slight. Dr. Dalton had not been able to find any pattern in which there was perfect symmetry. This want of symmetry was also one of the first peculiarities which had attracted his attention in making successive sections of healthy brains, and was present in whatever direction the sections might be made.

These observations raised a question of some practical interest. We were now very strongly inclined to believe that all parts of the brain had not one and the same function or mode of action; that there were certain nervous operations conducted by the gray matter in one part of the brain, and other different nervous operations performed by the gray matter in other parts, so that we had begun to localize in many instances in a pretty distinct way certain particular functions in certain particular convolutions. It was also pretty well established that these differences in function and mode of operation were connected with differences in structure; that the gray matter in the anterior and posterior cerebral convolutions possessed regions of nerve-cells of different volume and different shape; that whole regions differed from other whole regions in this respect; and the same thing was true in the perceptive centres. Dr. Dalton then asked the question, Suppose one examine a brain of which the two sides were very different in form, did this not imply an exaggeration or a deficiency of certain parts of the brain that were endowed with special functions, and consequently differences in the operation of the nervous system? This might seem a natural conclusion, and yet he was not at all sure that it was well founded. If we took a long brain and a round brain and examined them, we should, in the first place, perhaps feel sure that the long brain had in it more gray matter in the cortical layer than had the round brain, because a sphere, of course, had a smaller extent of surface in proportion to its bulk than any other form of body. But it must be remembered that the brain did not present a

perfectly smooth outline, but was convoluted, and the round brain, therefore, might have more extensive folding of the convolutions, and consequently present as great an amount of cortical gray matter as did the long brain. Dr. Dalton showed some skulls, one illustrating the long head and another the round head, and stated that the round head was higher, fuller in the coronal region, whereby it might gain in superficial area. He inferred that this difference in superficial outline at a given portion of two different brains did not indicate a deficiency or an over-amount of special function; in the one case the corresponding convolutions might be shallow but wide, while in the other they were deep and narrow. There might be the same physiological quality in a particular part of the gray substance, although its position might be varied and even shifted. As bearing upon this point, Dr. Dalton presented two Indian skulls, in which the form had been changed by the custom of compressing the yielding skull of the pappoose, and compelling it while growing to assume a particular shape. It did not necessarily follow that in the one in which the forehead was greatly compressed there was none of that portion of the brain devoted to intellect, assuming that the intellect had its seat in the anterior convolutions; or that in the other, compressed in the occipital region, there was absence of the posterior lobes.

DISCUSSION.

The PRESIDENT said that about fifteen years ago there was a good deal of discussion among obstetricians with regard to the influence of parturition upon the shape of the human head. About that time he instituted some investigations at Bellevue Hospital regarding the shape of the head at birth. These investigations showed that the head of the infant, while being moulded to pass through the pelvic canal, became flattened at portions where there was greatest pressure, and filled out at portions where the resistance offered by the hard parts was least. For instance, if the occiput presented at the left iliopectineal eminence and the sinciput to the right sacro-iliac synchondrosis, the corresponding diameter of the child's head would after birth be found to be shorter than the opposite diameter. By this means he had been able to determine, when called in consultation within a few hours after a child's birth, what had been the presentation. There was another point which related to the change in the form and size of the adult head at different periods of life. Dr. Barker felt quite sure that the head did continue to change even until late in life. This was noticeable in his own case, as was shown by the hatter's patterns during the past twenty-five years.

Dr. J. L. CORNING thought Dr. Dalton had given a most accurate method for determining the form of the head. He had been interested in the suggestion that function depends rather upon whether the brain-structure is absolutely intact, than upon whether it presents a particular form. His remarks would show, for example, that pressure applied to the anterior portion of the head would result, not in obliteration or atrophy of the brain-structure below, but rather in pushing those parts in such a manner that they found room and place elsewhere. This question had its bearings upon another question to which considerable attention and importance had been given by some, namely, with regard to the influence of asymmetry of the skull upon the soundness of the mind. Dr. Corning was not disposed to attribute much importance to this peculiarity in cranial outline.

Dr. DAVID WEBSTER said the statement made by the President that the head may change in form would account for the fact that his hatter had been compelled to alter his hat-pattern from time to time.

Dr. DALTON closed the discussion, and said the points brought out by the President were very interesting, and he was glad that attention had been called to them. He finished his remarks by saying that he thought we could not conclude certainly from asymmetry or a difference in external form of the adult head that there is a corresponding deficiency or enlargement of the brain underneath. It may exist, but it is uncertain.

AN IMPROVED METHOD IN THE TREATMENT OF CERTAIN FORMS OF SKIN AFFECTIONS.

Dr. ALBERT P. MORROW read a paper with this title. The method of treatment indicated consisted essentially in the application of medicinal substances to the skin in the form of fixed adhesive preparations. The object was to confine the application of the drug to the diseased surface alone, and to secure its continued action by long contact with the tissues by means of a practically immovable dressing. The means for carrying out this idea might be stated as follows: Applying the drug as a powder or paste, protected by a coating of collodion or other substance; by mixture with gelatin rendered soft and pliable by means of glycerin; by combining the drug in desired proportion with collodion or gutta-percha; by medicated gutta-percha mixture applied on cloth and cut into suitable forms. The author could not hope to offer anything new to specialists in this department, but an explanation of the procedure might not prove uninteresting to the general practitioner. Although their introduction dated back one or two years, they might be regarded as substantially new, since they were not described in recent text-books on skin diseases. He would endeavor to present the method in as concise a style as possible consistent with clearness, giving the main features of its application, the conditions in

which it was indicated, and the appreciation of its value based upon clinical results, derived partly from his own experience and largely from the experience of others. He thought its introduction marked a decided advance in cutaneous therapeutics.

The author first mentioned the appliances used hitherto for bringing medicines in contact with the cutaneous surface,—powders, lotions, pastes, plasters, resins, and ointments. But their use was attended with certain disadvantages. For example, powders were easily rubbed off, and when applied to exuding surfaces they frequently formed crusts and aggravated the trouble. Lotions evaporated, leaving the skin dry and brittle, causing uneasiness and distress. Pastes and plasters were of limited application, and, because of their uncleanliness, never had become popular. Resins acted as irritants. Ointments were generally regarded as the most convenient form, but they were easily rubbed off or became absorbed by the clothing; they were also uncleanly, and offended the taste of fastidious patients. Again, they had not the consistency to exclude air and thus effectually protect the surface; it was difficult also to restrict the oleaginous substance to the seat of the disease. He did not wish, however, to detract from the real value of these methods in some cases; indeed, they were often most valuable, and could not be substituted by any other method.

The range of adhesive plasters also was not universal; on the contrary, it was comparatively limited. In many cases of eruption, with a high grade of inflammation, and in other conditions, their application was impracticable.

Among the valuable drugs with which cutaneous therapy had become enriched were chrysarobin, salicylic acid, naphthol, chrysophanic acid, etc. The difficulty in applying some of these to the skin by former methods had led to the invention of the improved methods of which the author would speak. Chrysarobin possessed the objectionable property of staining the hair, skin, nails, and clothing, and of irritating the healthy skin and producing erythema and erysipelatous inflammation. This had led Dr. Fox to limit the drug by covering it, when mixed with a paste and applied to the skin, by a piece of gutta-percha tissue rendered adhesive by touching its edges with collodion; but this method of application was tedious. Dr. Morrow then referred to the preparations brought forward or used by different physicians for the treatment of skin affections,—Auspitz, Mitchell, Fox, etc. Drugs mixed with collodion had the advantages of convenience for use, of cleanliness, and of remaining for a time upon the skin. Gelatin mixed with water and allowed to dry could be kept for use. When applied to the surface it could be softened with hot water. It might be put up in rolls, etc. Auspitz claimed advantages for a solution of refined gutta-percha in chloroform, it being quite durable, elastic, and dried more slowly than collodion, thus admitting of more thorough application, and presenting qualities which specially adapt it as an application to joints.

Gutta-percha plasters constituted a decided improvement upon lead and resin plasters. They were very convenient for application to the diseased skin of the palms, fingers, toes, interdigital spaces, near the anus, etc. They could be cut into strips admitting of accurate adjustment.

After briefly referring to the advantage with which certain authors had made use of collodion and gelatin adhesive plasters, medicated with chrysarobin, salicylic acid, carbolic acid, oxide of zinc, etc., in the treatment of psoriasis, chronic eczema, prurigo, and other forms of skin disease, Dr. Morrow gave his own experience, and stated that he had experimented with the preparations in a variety of cutaneous disorders, and for the most part with satisfactory results. He had been enabled to use chrysarobin in psoriasis affecting the face and hairy scalp without danger of injury to the eyes or other delicate parts. In chronic forms of eczematous disease, and even in acute forms, he had used gelatin medicated with ten per cent. of oxide of zinc with good results. A single application of gelatin medicated with ten per cent. of oxide of zinc and one per cent. of carbolic acid gave complete relief in an obstinate case of chronic eczema. Over the eyelids the gelatin coating could not be applied, for obvious reasons, and here a bismuth ointment was employed. After a few days one could see the exact line where the gelatin application terminated. Above this line the skin was harsh and presented its original characteristics, while below it was soft, and healthy in appearance.

Dr. Morrow summed up the advantages of adhesive applications in saying that they afforded complete protection to the part to which they were applied, and excluded the air; their fixation admitted of greater and more permanent action; by compression, they modified the circulatory changes and limited exudation; they were cleanly. They were of special benefit in cases of tendency to cutaneous hyperplasia from different morbid conditions, in overgrowth of the hard epidermis, in acne rosacea, chronic eczema, in tinea capitis, in syphilitic lesions, lupus, possibly epithelioma, etc.

Dr. E. B. Bronson particularly admired the conservative manner with which the author had alluded to these new remedies. They had, it was true, become the fashion; the chances were that they would be overdone. They were suitable to certain forms of disease, and presented certain advantages over other forms of therapeutics. They were

not, however, of universal application. He had experimented with most of the applications referred to, and had arrived at the conclusion that the gelatin preparations possessed comparatively little value. The collodion and gutta-percha preparations were much easier of application, and it seemed to him that they would in time entirely supersede those of gelatin. He had used them to a considerable extent, more particularly the gutta-percha preparations, and could fully endorse all that had been said in their favor by Dr. Morrow. The diseases in which he had found them useful were those in which there was a certain degree of thickening. He did not think that their chief advantage was in their power to protect the parts, for the reason that, where it was desirable to do this, the remedies were not suitable, as they could not be applied sufficiently often. For instance, in eczema, it would be necessary to change the application at very frequent intervals, and under those circumstances, although protection was of the first importance, a protective dressing which was fixed, and could not be readily reapplied, was rather objectionable. It was rather for exact coaptation to the parts that these remedies were of especial excellence. Another advantage, especially in psoriasis, was the deliberate manner with which they could be applied. Gelatin preparations set too rapidly. In using chrysarobin in psoriasis, it was specially necessary to rub it thoroughly in. With the gutta-percha solution of Auspitz this could be done. Its chief advantage, however, was in that form of eczema in which there was considerable circumscribed thickening, and perhaps some itching. If it were desired to simply stop itching, the surface might be painted over with carbolic acid, and over this put a coat of gutta-percha protective.

Dr. JACKSON had made use of these methods, and had found trouble in applying the gelatin preparations; and, besides, in the few cases in which he had used it it caused more disturbance than the other methods. With regard to the collodion preparations, he agreed with Dr. Bronson as to their value in psoriasis and chronic eczema.

Dr. SHERWELL, of Brooklyn, had not had much experience with these methods. He had made use of preparations of collodion with salicylic acid and chrysarobin, with more or less satisfaction. He could conceive how the gelatin preparations, as Dr. Bronson had said, might be inconvenient to use, and he thought that there would be many difficulties in the way of applying these preparations to parts covered by hair. He could not see how they could be applied and kept on, and renewed, and when applied made as effective as unguents.

Dr. MORROW said the criticism which Dr. Bronson had passed upon the gelatin preparations might be perfectly reasonable from his stand-point, but he had not found any inconvenience in their use,—that was, no more than the time requisite for heating them and for their application. He thought that the efficacy of the gelatin preparations depended largely upon the exact proportions in which the gelatin, the glycerin, and the active ingredients were combined. For example, the first preparations which were made for him were defective, and had he passed judgment upon the value of gelatin applications from his first experience, that judgment would have been very unfavorable. But repeated trials produced better results each time. Simply by adding a little water or a little glycerin, as he found to be necessary, the proper degree of consistency could be secured, and when applied in this way they certainly formed a perfectly uniform elastic coating, which remained perfect, without cracking, for several hours,—depending upon the location and the motion to which the part was subjected. As to Dr. Sherwell's objection to the application of gelatin to exuding surfaces, he had conceived the same objection theoretically, but practically there was not this objection. As to Dr. Sherwell's objection to their application to the hairy parts, he had the hair cut off, and then found no difficulty in making applications containing chrysarobin, etc. There were certain other theoretical objections to the use of these preparations which had arisen in his mind, but which did not hold true when he came to make use of them in practice.

Dr. W. M. CARPENTER then read some resolutions, which were adopted by the Academy, cordially endorsing the aims of the Society whose object was to furnish first aid to the injured.

NEW YORK PATHOLOGICAL SOCIETY.

A STATED meeting was held February 13, 1884, GEORGE F. SHRADY, M.D., President, in the chair.

URETHRAL STRICTURES, COMPLICATED WITH DILATATION AND HYPERTROPHY OF THE BLADDER AND URETERS, AND HYDRO-NEPHROSIS.

Dr. F. FERGUSON presented the specimens, which had been removed from the body of a man who died at the Emigrants' Hospital. The patient had been treated for urethral stricture at Guy's Hospital, and later entered St. Bartholomew's, where an operation was advised, but was refused. On admission to the Emigrants' Hospital he was suffering intense pain, and the bladder was distended to some distance above the pubis. Any operative interference whatever was positively refused, and the patient died without relief. He had denied venereal disease or injury. At

the autopsy three strictures were found in the membranous portion of the urethra, two of which were imperforate. The urethral canal was largely distended back of the strictures, and the bladder and ureters were greatly distended and their walls hypertrophied. The kidneys were in a marked degree the seat of hydronephrosis.

CARCINOMA OF THE STOMACH AND ŒSOPHAGUS.

Dr. FERGUSON also presented specimens which had been removed from the body of a woman who had died in her 43d year, at the St. Luke's Hospital. The symptoms had been pains in the back and epigastrium, and pain after eating. Vomiting set in later. The patient had lost much flesh, and presented a cachectic appearance. Solid food could not be taken. There were attacks of hæmatemesis. Nourishment was administered per rectum. At the autopsy, which was made January 30, 1884, about one-third of the cardiac end of the stomach and the lower portion of the œsophagus were found the seat of carcinomatous ulceration. There were no secondary deposits.

PUERPERAL FEVER.

Dr. CHARLES C. LEE presented the uterus of a woman who had died in the hospital nine days after delivery, of puerperal fever. Labor had been normal. There was a slight laceration of the perineum, which was united by a single suture. Vaginal injections were employed after delivery. No abnormal symptoms developed until the fourth day after delivery, when, in the morning, the temperature rose to 103°, and the patient appeared to be quite ill. The pulse was one hundred and twenty. In the afternoon the temperature rose to 104°. The pulse was one hundred and thirty. It was supposed the patient was suffering from milk-fever, until the lochia began to be offensive, and then intra-uterine injections of bichloride of mercury, one part to two thousand parts of water, were begun and continued until the day of the patient's death. They were first begun less than twenty-four hours after the rise in temperature indicated that the patient was ill. The douche had the effect for the first two days of keeping the temperature below 102°, but after that it seemed to have no effect whatever upon the symptoms. Fetid granular débris came away, but there were no signs of membranes. At the autopsy the abdomen was found distended by gas contained within the stomach and intestines. The peritoneum was cloudy and covered with a pellicle of fibrin and pus, and its cavity contained a small amount of sero-purulent fluid. The uterus was partly involuted, but was free, and its external surface showed no signs of inflammation. Its lining membrane was covered by a dirty-brownish granular material, heaped up to an irregular depth, at places being an eighth of an inch thick. It contained no fibres, and evidently was composed of broken-down clot. It possessed an offensive odor. Dr. Lee remarked, concerning the case, that while it did not show but what intra-uterine injections were most important and necessary in the treatment of puerperal fever, it did show that this method should not be relied upon entirely, to the exclusion of all others, as practitioners of more limited experience might infer from discussions upon this subject before our medical societies during the past few months. In this case the douche was employed during the full course of the disease, commencing a few hours after the first development of symptoms, and was administered by an experienced house-physician, and yet the patient died. Dr. Lee also showed two glass tubes for making intra-uterine injections, and a hard-rubber tube employed in Vienna, and expressed it as his belief that the curve of the latter instrument was best suited for introduction into the uterus in the position which it assumed just after labor.

Dr. A. JACOBI thought the height to which the temperature had reached would indicate that the septic poisoning had gained too strong a hold before the injections were begun. In diphtheritic inflammation the temperature often remained comparatively low throughout the entire course of the disease. He agreed with Dr. Lee, however, that we must wait for symptoms to develop before beginning the intra-uterine injections, although his diagnosis at that time might come in too late to save the life of the patient. Regarding tubes, he had, notwithstanding all that had been said in favor of the glass tube, confined himself to the use of the large elastic-rubber tube, which he introduced into the uterine cavity, gradually withdrawing the wire as he did so, and thus was certain that the tube entered the cavity and did no harm.

IMPERFORATE ANUS.

Dr. W. P. NORTHRUP presented a specimen removed from a child which died in the Foundling Asylum, at the 8th day of age. It had been sent out to nurse, and was returned with the statement that it had vomited its food, was very restless, and had had no passage. Externally the anus appeared normal, but on introducing the finger inside the sphincter it came in contact with a thin membrane, and, penetrating a little farther, another membrane was ruptured, when gas and fæcal matter escaped. There was much relief of symptoms afterwards, and it was thought the child would live, but, without very good cause, it died eight days from birth. At the autopsy the abnormality just mentioned was verified.

GENERAL INTERSTITIAL TISSUE HYPERPLASIA.

Dr. A. JACOBI presented a series of specimens removed from the body of a child which

died at about the 2d month of age, at Bellevue Hospital, where it had been brought with the sick mother. Death took place rather suddenly, and nothing specially abnormal had been observed in the child's condition. At the autopsy a lateral pharyngeal abscess was found on the left side, and in the neighborhood enlarged glands. A number of glands in the body, the bronchial, mediastinal, and mesenteric, were considerably enlarged. The left lung was the seat of hyperstasis, its apex emphysematous. The right lung was the seat of interstitial pneumonia. The liver presented numerous small dots, due to interstitial hyperplasia, and it contained a slight amount of fat. The spleen had apparently undergone the same change. The walls of the lower third of the small intestine were thickened; Peyer's patches were enlarged, some having undergone ulceration. The kidneys had likewise undergone interstitial tissue-hypertrophy. The brain was not apparently abnormal. There was no history, but it was probable that an explanation of the general interstitial hyperplasia would have to be sought in hereditary syphilis.

STRICTURE OF THE ŒSOPHAGUS.

Dr. BEVERLEY ROBINSON presented the specimen, which had been removed from the body of a man 42 years of age, who died in St. Luke's Hospital. He had suffered from a profuse muco-purulent expectoration, from considerable dyspnœa, from vomiting, and had lost flesh. During the three weeks the patient was in the hospital there was no vomiting, and it was only during the latter two weeks of his life that he complained of difficulty in swallowing,—a fact of some interest, as, at the post-mortem, the œsophagus was found nearly completely obstructed some distance of its length by carcinomatous degeneration.

AN OSTEOTOME.

Dr. J. A. WYETH presented an osteotome, invented by Mr. Gowan, of Guy's Hospital, and also a modification of the instrument, made by himself. It consisted of a saw made in the shape of a chisel, which was moved through the segment of a circle while held firmly in a slot connected with a pair of spring-jaws intended to steady the bone while it was being divided. He looked upon the instrument as the most valuable in his armamentarium. It had given entire satisfaction, and with it he had performed excision at all the principal joints of the body.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

AT a meeting held February 14, 1884, Dr. JAMES TYSON, President of the Society, in the chair, the following specimens were presented:

Aneurism of the left ventricle. By Dr. W. E. HUGHES.

A man, 58 years of age, usually having good health, had in September last an attack of hemiplegia, without loss of consciousness. He was gradually recovering, but was seized with violent pain in the chest, like angina pectoris, and a double pericardial friction-sound was audible. He died suddenly, November 15, while sitting up in bed to take a glass of water.

Autopsy.—No evidence of extravasation into brain; vessels atheromatous. General pericarditis and recent adhesions. Heart large; left ventricle dilated and hypertrophied; a sacculated dilatation was observed, involving the intraventricular septum and the wall near the apex, capable of holding about two fluidounces: this was filled by a fibrous clot, containing in its centre a small quantity of grumous pus. In the anterior wall the tissues had given way, but the rupture was filled with a small clot, firmly adherent and projecting slightly into the pericardial sac. A similar state of affairs was seen in the ventricular wall, a clot projecting into the right ventricle. Heart-muscle was fatty; atheromatous condition of aorta and semilunar valves, but valves were competent; other valves healthy. Coronary arteries not atheromatous.

Pernicious anæmia. Dy Dr. W. E. HUGHES.

A white man, 45 years of age, having a strong malarial history, was admitted into the University Hospital in a condition of extreme anæmia and exhaustion, with a history of illness of two and a half years' duration. He denied venereal taint. He had suffered from several prolonged attacks of diarrhœa. The blood was pale and watery, and contained six hundred and sixty-five thousand red and six thousand white corpuscles to the cubic millimetre. Eye-grounds pale, no hemorrhages. Urine contained no albumen or sugar. Death was preceded by delirium.

At the *autopsy* the only characteristic changes were found in the bone-marrow; the liver and spleen were not markedly changed.

Dr. FORMAD said that the marrow, especially of the upper extremities, showed in a marked degree the typical currant-jelly appearance first described, he believed, by Drs. Pepper and Tyson.

Dr. J. H. MUSSER said that some of the clinical features of the case were unusual, especially the absence of retinal and other hemorrhages. The heart, too, is usually fatty, and he had thought that medullary bone-changes were unusual, the text-books on pathology containing such statements. He brought the matter forward, as he would like to have some light thrown on such discrepant statements.

Dr. BRUEN thought that the bone-changes occurred more frequently when the case was

idiopathic than when there was a malarial history, as in one case seen by him.

Dr. TYSON said that the description of pernicious anæmia in the pathological text-books was very vague, and no mention was made of bone-changes such as described by Dr. Pepper and by himself in *Virchow's Archives* some years ago. This paper seems to have been entirely overlooked.

Dr. SYDNEY ROBERTS had had the opportunity of examining the fractured femur of a woman suffering from this disease, when he noted appearances identical with those presented by the humerus before the Society this evening.

Excision of the shoulder-joint. Presented by Dr. C. B. NANCREDE.

Anna M., æt. 17 years, was admitted into the Episcopal Hospital May 14, 1883. One year previous she fell down-stairs and struck her shoulder. She was unconscious for a short time, but was soon able to walk home. The arm did not become inflamed. Nine months after the fall she noticed pain in the shoulder, and an elevated papule formed near the joint, which was opened at the dispensary. This relieved the pain, but left a fistulous tract, discharging healthy pus. She was sent into the house because Dr. Seltzer, the assistant surgeon on duty, had found dead bone. After admission, she had pain from time to time, gradually increasing in intensity, until shortly before operation. Other free openings for drainage were made. *Diagnosis*, epiphyseal abscess and strumous disease of the joint.

The operation showed complete destruction of the joint, a carious and denuded humeral head, with an abscess about the epiphyseal site, containing a sequestrum. The glenoid cavity was denuded of cartilage and roughened. The portion of head and shaft such as you see were removed, while all the glenoid cavity was cut away with the gouge-forceps, except where the long head of the biceps was attached. The patient was practically well at the end of two weeks.

Excision of astragalus. Presented by Dr. C. B. NANCREDE.

E. X., æt. 9 years, mulatto, a patient of the Episcopal Hospital, received some slight injury of the right ankle-joint about one year ago, followed by the usual symptoms of strumous arthritis. About two months since, Dr. Packard freely opened the articulation and inserted an oakum seton. Temporary benefit ensued, but February 13, 1884, I found the bone so diseased as to demand excision. This was effected with great readiness by a semicircular incision upon the outer side of the joint, whereby the peroneal tendons were exposed, their sheath partially opened, thus admitting of their being drawn to one side, and the ligamentous structures of the astragalus easily divided. The bone was partially anchylosed to the under surface of the tibia, and nearly all of its tibio-fibular cartilaginous surfaces were bared and carious. All the other tarsal bones seemed perfectly healthy.

Specimens from a case of extensive trephining of the skull. Presented by Dr. C. B. NANCREDE.

These specimens, consisting of nearly the whole right squamous plate of the temporal bone, the inferior angle of the parietal, and a portion of the frontal,—in other words, the anterior two-thirds of the temporal fossa, from the orbital plate nearly to the temporal ridge, and from the external angular process of the frontal to a line posterior to the external auditory meatus,—were removed by me from a man this day who had been struck by an iron lever, which caught his head between it and a large beam. Although the depressed area must have been fully an inch deep, yet he walked into the dispensary of the Episcopal Hospital presenting apparently neither motor nor sensory disturbances, pupils and tongue normal. He was at once sent up to the male surgical ward, and I proceeded to trephine, cut away the overhanging shelf of sound bone with the "rongeur," and thus elevate and remove over a dozen fragments of bone. The dura mater seemed uninjured. As the specimens show, the middle meningeal artery must have been torn and fortunately twisted in removing the fragments, as it was completely surrounded by a bony canal. One branch in the meninges was tied with fine catgut ligature, and the wound, as well as a deep scalp-cut on the opposite side, was dressed with mercuric bichloride. He has done well since (February 26, 1884).

C. B. N.

REVIEWS AND BOOK NOTICES.

A TREATISE ON BRIGHT'S DISEASE OF THE KIDNEYS: ITS PATHOLOGY, DIAGNOSIS, AND TREATMENT. With Chapters on the Anatomy of the Kidney, Albuminuria, and the Urinary Secretion. By HENRY B. MILLARD, M.D., A.M. 8vo, pp. 346. William Wood & Co., New York, 1884.

Dr. Millard's present work, we learn from the preface, is the result of his experience of nearly twenty-six years of hospital and extensive private practice and of several years' laboratory work spent in the study of healthy and pathological kidneys of men and animals.

The opening chapters are devoted to the minute anatomy of the kidney. The author closely follows Heitzmann in histology. He sums up the results of his own investigations in the following statements:

1. The Heidenhain rods in some varieties

OLEATES.

These preparations are salts formed by the union of oleic acid with the respective bases indicated. They are designed for external application, and owe their superiority to the well-known penetrative property of oleic acid. Their medicinal action is entirely dependent on their bases, which are quite readily introduced into the circulation when applied epidermically in this form. As a means of securing the constitutional effects of these bases, their application in the form of the oleates offers many advantages, which will be readily appreciated, especially in the treatment of children and in cases of irritability of the stomach.

Although the advantages to be derived from the combination of bases with oleic acid were recognized as early as 1872, the use of these compounds has not become general, and principally because of defects in the pharmaceutical preparations, the original crude method of their preparation not having been improved upon. Within the past year Dr. J. V. Shoemaker, of Philadelphia, has made the subject of the oleates one of especial study and experiment, both from a pharmaceutical and a clinical standpoint. The result has been the production of a number of very eligible compounds and the discovery of therapeutic properties hitherto unrecognized. We have secured from Dr. Shoemaker full information touching his methods, and are now prepared to furnish oleates of the following metals, which have been found of great value in the affections indicated:

ALUMINIUM.—A valuable astringent, serviceable in eczema, and as a dressing for burns.

ARSENIC.—This preparation contains twenty (20) grains of oleate of arsenic to the ounce, and is employed as a caustic in the treatment of lupus, epithelioma, etc.

BISMUTH.—An excellent emollient application.

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IRON.—Readily soluble in the fats, and useful both as a local astringent and as a general tonic.

MERCURY.—Useful as a discutient to inflammatory exudates, and for the constitutional effects of the metal.

LEAD.—A cleanly and efficient substitute for Hebra's Diachylon Ointment.

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Morphine (10 per cent. of the alkaloid).
Morphine and Mercury (5 per cent. morphine and 20 per cent. mercuric oxide).
Quinine (25 per cent. of the alkaloid).
Strychnine (2 per cent. of the alkaloid).
Veratrine (10 per cent. of the alkaloid).

OINTMENTS OF OLEATES.

These contain the several metals mentioned above. They are much more cleanly than ointments as ordinarily prepared, and for all the properties of ointments are much to be preferred.

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Syrup, containing ½ milligramme to each teaspoonful; Dose, from 1 to 6 teaspoonfuls per day.

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of the tubuli uriniferi are part and parcel of a reticulum present within every epithelium.

2. The reticulum, including its elongated rod-like formations, is the living matter proper.

3. The relation of the rods to the rest of the reticulum of an epithelial body varies greatly, the variations being probably due to different stages or degrees of secretion.

4. The reticulum, including the rod-like formations, in the inflammatory process, both in catarrhal and croupous nephritis, gives rise to a new formation of living matter, which results in the new formation of medullary corpuscles or pus corpuscles.

5. The structureless membrane is lined by flat endothelia lying between it and the basis of the epithelia of the urinary tubules.

6. In nephritis, the endothelia become considerably enlarged, and in catarrhal as well as in croupous nephritis they line the urinary tubules after the epithelia have been shed or lost. They surround the cast in croupous nephritis after the epithelia have perished in the formation of the cast.

The nature and sources of the urinary secretion and extractives are next considered, and, in due order, the significance of albumen in the urine and the general conditions of its occurrence in health and disease; the tests for albumen, and the importance and significance of urinary casts and various forms of epithelium. Bright's disease is discussed under the headings croupous, interstitial, and suppurative nephritis. Nephritis without albuminuria receives the attention it merits, the author here insisting upon the importance of oft-repeated examinations of the urine in suspected and doubtful cases, the necessity of the systematic use of the microscope, and the diagnostic value of renal epithelium and pus in the deposits of non-albuminous urines.

The second part of the volume, which is devoted to the treatment of the various forms of nephritis recognized by the author, will be found interesting and suggestive. Familiar methods of treatment and well-known remedies are reviewed in detail, and reference is made with fairness to drugs that are at present attracting attention, but which are yet to undergo more thorough investigation before their value in the treatment of these diseases can be determined. Among these are ergot, fuchsine, sodium tannate, nitroglycerin, helonias dioica, apis mellifica, and euonymus atropurpureus. The author ascribes to the mercuric chlorides the greatest value in the treatment of acute and chronic nephritis. His experience has led him to employ the mild chloride in interstitial, and the corrosive chloride in croupous nephritis. The doses are minute. One part of calomel is triturated with ninety-nine parts of sugar of milk, and of this mixture five to ten grains are administered every two or three hours, care being taken not to act injuriously upon either the mouth or the bowels. The proportion of corrosive sublimate employed is one part in ten thousand parts of sugar of milk (ten grains containing a thousandth of a grain of the drug), and of this eight to ten grains are given at intervals of two or three hours. We are not informed how long this treatment is to be continued in chronic cases, nor does it rightly appear, from the author's report of acute cases, how long a period is necessary to bring about the happy result which followed. Notwithstanding the high endorsement that the use of opium in the convulsive accidents of nephritis has received by a few authorities, the author is opposed to its administration, despite the benefit it sometimes appears to confer. He scarcely dwells with sufficient emphasis upon the danger of repeated small doses of opium. The accidents and complications of the various forms of the disease do not, we think, receive the attention which is due them in such a work. In the selection of methods of treatment the author is manifestly guided by a spirit of broad eclecticism.

Alike from the literary and the scientific point of view, the book is marred by an air of sketchiness and looseness of make-up. Nevertheless, it will well repay close reading, if it be merely as a review of the present state of a subject which seems to be, just at this time, growing too fast to be properly cultivated.

THE INTERNATIONAL ENCYCLOPÆDIA OF SURGERY. A Systematic Treatise on the Theory and Practice of Surgery, by Authors of Various Nations. Edited by JOHN ASHHURST, JR., M.D., Professor of Clinical Surgery in the University of Pennsylvania. Illustrated with Chromo-Lithographs and Wood-Cuts. In Six Volumes. Vol. IV. New York, William Wood & Co., 1884. Pp. 987. By subscription.

One of the most satisfactory volumes of the series is the fourth volume of the International Encyclopædia, which fully maintains the high standard of the previous issues of this great work. Although the article on "Diseases of the Bones," by Prof. Ollier, of Lyons, was unavoidably delayed, the other contributions are sufficiently comprehensive and correlated to form a complete and acceptable volume. These are "Injuries of Bones," by John H. Packard, M.D., Surgeon to the Episcopal Hospital and to St. Joseph's Hospital, Philadelphia (260 pages); "Diseases of the Joints," by Richard Barwell, F.R.C.S., Surgeon to Charing Cross Hospital, London (178 pages); "Excision of the Knee-Joint," by George E. Fenwick, M.D., C.M., Professor of Surgery in McGill University, Surgeon to Montreal General Hospital (8 pages); "Tumors," by Henry Trentham Butlin, F.R.C.S., Assistant Surgeon to, and Demonstrator of Surgery at, St. Bartholo-

mew's Hospital, London (124 pages); "Injuries of the Back, including those of the Spinal Column, Spinal Membranes, and Spinal Cord," by (the late) John A. Lidell, A.M., M.D., Late Surgeon to Bellevue Hospital, New York, etc. (224 pages); "Malformations and Diseases of the Spine," by Frederick Treves, F.R.C.S., Assistant-Surgeon to, and Senior Demonstrator of Surgery at, the London Hospital (73 pages); and an elaborate paper by the editor, on "Excisions and Resections," containing valuable statistical tables. The several articles give an admirable summary of recent knowledge upon the subjects treated, both in pathology and in treatment, and they are profusely illustrated with original cuts, including chromo-lithographs.

GLEANINGS FROM EXCHANGES.

BROMOFORM; A NEW ANÆSTHETIC.—Dr. Horroch reported to the Society of Physicians of Vienna, recently, the results of his experiments with bromoform. The drug, discovered by Lowig in 1832, is prepared by the addition of an alkali to the hydrate of bromal. It has a pungent, aromatic, ethereal odor, and a sweetish taste. It is oily, colorless, is soluble in warm water and ether, and boils at 151° C.

In the experiments referred to, it was found that anæsthesia was easily produced by inhalation; the stage of excitement was short and of a mild form. Animals did not vomit after coming out of this condition, and appeared well.

Hypodermic injections of one gramme of bromoform produced in large animals complete narcosis, lasting for an hour, during which time the temperature fell from 2° to 4° C.

The internal administration of bromoform in doses of from one to one and a half grammes produced sleep of several hours' duration in dogs, rabbits, and cats. Reflex excitability was entirely abolished, and irritation of the sciatic nerve failed to effect any changes in the blood-pressure. The peripheral ends of the vagus retained their irritability; the pulse remained about its usual frequency, but blood-pressure was diminished, and the bodily temperature was also reduced. From experiments made at the surgical clinic, it was found an efficient and rapid anæsthetic, both in adults and in children. It was milder in its effects than chloroform, for which it appears to provide a substitute, but it is not likely that it will supersede sulphuric ether.—*Medical Record.*

ALTERNATE HOT AND COLD APPLICATIONS IN INTERNAL STRANGULATION.—A man 42 years of age, who had some years previously suffered from a severe attack of peritonitis, was suddenly seized with violent colic. There was meteorism; the abdomen was generally tender on palpation, but more especially at a point a little to the right of the umbilicus. There was no passage either of fæcal matter or of gas from the bowel, and purgatives, whether administered by the mouth or by the rectum, brought no relief. The obstruction of the bowels continued several days, despite an active and varied treatment, stercoraceous vomiting set in, and the patient was rapidly sinking. At this time, all other measures having been tried in vain, Dr. Roux determined to try the effect of the alternate application of heat and cold to the abdomen. An ice-bladder was first applied and retained for an hour, then it was removed and compresses as hot as could be borne were placed over the abdomen. These applications were continued every hour through the day and night. In the evening some gas escaped from the bowel, and the following morning there was a slight stool. A mild purgative was now given, and was soon followed by a copious evacuation, and the patient speedily recovered.—*Lyon Médical*, September 9, 1883; from *The Practitioner.*

MIRGACHIT.—During a journey through Siberia undertaken by Lieutenant B. H. Buckingham and Ensigns G. C. Foulk and Walter McLean, U S.N.,* they encountered a case illustrating a peculiar condition of the nervous system, which compels the subject to repeat automatically any muscular action, or to obey any command, when it is suddenly brought to his attention. The disorder, which appears not incompatible with perfect physical health, is said not to be uncommon in Siberia, especially about Yakutsk, where the cold is extreme. Both sexes are subject to it, the men less than the women. It is known to the Russians as mirgachit. Dr. W. A. Hammond recently read a short note upon this newly-described disease of the nervous system before the New York Neurological Association, in which he discovers some relation between this malady and the jumpers of Maine and Northern New Hampshire, and also with cases of sudden and transitory epileptiform mania in persons suddenly aroused from sleep.—*New York Medical Journal*, February 16.

STRENGTH OF COMMERCIAL NITRITE OF SODIUM.—The papers on the use of nitrite of sodium by Dr. Hay, in *The Practitioner*, having drawn attention to this drug, the strength of it becomes a matter of considerable importance. This has been clearly shown by the results of Dr. Ringer's experiments upon animals and the disagreeable effects observed by Dr. Murrell in some of his patients

* Observations upon the Korean Coast, Japanese-Korean Ports, and Siberia, made during a Journey from the Asiatic Station to the United States through Siberia to Europe, June 3 to September 8, 1882. Published by the U.S. Navy Department, Washington, 1883.

from administration of the drug. Mr. McEwen has examined a number of specimens, and he finds them to vary enormously, some of them containing only a mere trace of nitrite,—0·011 per cent.,—whereas others contain no less than 98.5 per cent. The large and transparent crystals are almost invariably worthless. The fused nitrite is also weak, whereas the small crystals contain a large proportion of true nitrite. As the drug deteriorates very much when kept in stock for a few months, its strength should be ascertained from time to time by analysis.—*Pharmaceutical Journal*, p. 121, No. 684; from *The Practitioner*.

ANTAGONISM OF ALCOHOL AND STRYCHNIA.—At the last meeting of the Société Française de Tempérance, Dr. Dujardin-Beaumetz read a communication on the "Treatment of Alcoholism by Strychnia" (rather a curious subject, by the way, for a mixed lay and medical audience), in which he noticed the recommendation made some time since by Dr. Luton, of Rheims, that strychnia being now recognized as the appropriate medical agent for alcoholism, the government should authorize its addition to alcoholic beverages, in order to guard against their ill effects. Dr. Dujardin-Beaumetz, however, demonstrated, as the result of his experimental investigations and of observations made on man, that, although strychnia may be advantageously used in combating the symptoms of intoxication and acute delirium caused by alcohol, it is powerless as regards the multiple alterations in different organs which are the results of the presence of alcohol in the different tissues of the economy. Strychnia, therefore, is only, at the very most, a therapeutical agent, capable of causing the disappearance or mitigation of some of the symptoms induced by the abuse of alcoholic drinks.—*Medical Times and Gazette*.

EUTHANASIA OR MURDER,—WHICH?—I had two patients within a year who, when they could not live, found it almost impossible to die. They were both good men, and had looked death in the face more than once without alarm. In the one, after a ten hours' struggle I asked, "Would you like to sleep?" The answer, "Yes," and the expression of joy replacing the anguish, were enough to warrant this consideration of the subject. One injection of morphia, and there was rest in ten minutes, and a sleep that faded into death in four hours. In another, after a night with death, I said to the mother, "Shall he sleep?" There could be but one answer. If it is possible to prevent this suffering and let him sleep, let it be done at once.

I do not believe that it is right for one to take his own life because life is only prolonged misery and suffering; and I do not think it right, in such a case, for the physician to do that which would shorten the man's days. But when death is at the door and will not be said nay, then to open the door is an act of charity.—*Eclectic Medical Journal*; from *Gaillard's Medical Journal*.

MISCELLANY.

THE BRITISH MEDICAL ASSOCIATION will hold its fifty-second annual meeting on July 29, 30, and 31, and August 1, 1884, at Belfast, under the presidency of James Cuming, M.A., M.D., F.K.Q.C.P.I., Professor of Medicine, Queen's College, Belfast. The Address in Medicine will be delivered by Sir Andrew Clark, Bart., M.D., F.R.C.P., Physician and Lecturer on Clinical Medicine, London Hospital. The address in Obstetric Medicine will be delivered by George H. Kidd, M.D., F.R.C.S.I., Master of the Coombe Lying-in Hospital, Dublin. The address in Physiology will be delivered by Peter Redfern, M.D., F.R.C.S.E., Professor of Anatomy and Physiology, Queen's College, Belfast. Visitors coming from America to attend this meeting can travel by any of the following routes:

1. A "Cunard" steamer will leave (*a*) New York on Wednesday, July 16, arriving in Queenstown about the following Thursday week, July 24; (*b*) Boston on Saturday, July 19, reaching Queenstown the following Monday week, July 28.

2. A "White Star" steamer will leave New York on Saturday, July 12, and on Saturday, July 19; due at Queenstown about July 20 and July 27.

3. An "Inman" steamer will leave New York on Tuesday, July 15; due at Queenstown about July 23.

4. An "Allan" steamer will leave Quebec on Saturday, July 19, arriving in Londonderry about the 26th or 28th July.

5. An "Anchor" steamer will leave New York on Saturday, July 19; due at Londonderry on July 29.

Londonderry is ninety-five miles from Belfast, and trains run daily between the two places.

The route from Queenstown to Belfast is from Queenstown to Cork, Cork to Dublin (one hundred and sixty-five miles by train), and Dublin to Belfast (one hundred and thirteen miles).

The time of the meeting of the British Medical Association at Belfast has been fixed so as not to interfere with the International Medical Congress, which is to begin at Copenhagen on the 10th August.

A steamer will leave Hull (England) on August 2 and 9, for Copenhagen; and on August 5 a steamer will leave Leith (Scotland) for Copenhagen. Both these places (Hull and Leith) can be reached on any day by leaving Belfast on the previous evening by the cross-channel steamers. Visitors after attending the meeting of the British Medical

Association in Belfast will have ample time to travel to Copenhagen for the Congress.

Communications in reference to the meeting of the British Medical Association at Belfast should be addressed to the Hon. Local Secretaries, John Moore, M.D., Alex. Dempsey, M.D., and John W. Byers, M.A., M.D.

PRIZE ESSAYS ON THE SUBJECT OF CANCER.—In March, 1882, a prize of one thousand dollars was offered for the best essay—if thought worthy of the prize—on the following subject: Probability of the Discovery of a Cure of Malignant Disease, and the Line of Study or Experimentation likely to bring such a Cure to Light. Dr. J. Collins Warren now reports that only six essays were submitted, none of which was deemed worthy of the prize.

THE MEDICO-CHIRURGICAL COLLEGE lost two of its faculty by death during last month. Dr. Frank O. Nagle died February 1 with typhoid fever; and Dr. Geo. P. Olliver, on February 20, died with apoplexy, being suddenly taken while in attendance at his lodge. They were both graduates of the University of Pennsylvania.

NOTES AND QUERIES.

HELLER'S TEST FOR ALBUMINOUS URINE MODIFIED.

EDITOR OF THE PHILADELPHIA MEDICAL TIMES:

DEAR DOCTOR,—Heller's test (cold nitric acid overlaid with urine) may, at times, mislead even those who have had experience in the analysis of urine. The fallacy liable to occur is the formation of a zone of *acid urates* which are but sparingly soluble in cold water. A suspected urine contains also, let us say, an abundance of urates *in solution*. This urine is added to the cold nitric acid in the tube, and you obtain a zone resembling albumen. If this zone be the acid urates thrown out of solution, or rather formed from the neutral urates by the action of the cold nitric acid, and less soluble in cold water than the neutral salt, the application of heat will dispel it (the zone). But this is a delicate procedure. The fluids and zone get mixed up, and thus you lose your experiment. I use Heller's test, but *modify* it thus:

Boil the nitric acid, and while *boiling* add the urine. The hot acid imparts its heat partially to the supernatant urine, and, if a zone be formed, *it is albumen and nothing else*. The acid urates are soluble in heated aqueous solutions, hence the heat from the boiled acid is sufficient to dissolve the salt. By the modification I have adopted I avoid, in the cases specified, much annoyance, and am assured of the accuracy of the result. A zone by Heller's test, *modified* as stated, means albumen, and, further, no other test for albumen has in my hands detected smaller amounts of albumen than Heller's test, *using boiling-hot* nitric acid in place of the cold acid.

Yours truly,
HENRY C. BOENNING,
528 Franklin Street.

OBITUARY NOTICE.

THE body of Passed Assistant Surgeon Ambler, U.S. Navy, one of the victims of the unfortunate "Jeannette" expedition, on February 23, was taken in charge at the Navy Yard, Brooklyn, by the escort,—Chief Engineer Melville, Surgeon Gravatt, Lieutenants Jacques, Danenhower, and Schuetze, and Passed Assistant Surgeons Harman, Gaines, Rixey, and McClurg; they were joined at Baltimore by Prof. L. McLane Tiffany, M.D., of the University of Maryland, G. Guy Holliday, M.D., James McHenry Howard, M.D., Ridgely Howard, M.D., and Henry Howard, Esq., of Baltimore, and at Washington by Medical Directors Browne and Gihon, Surgeons Van Reypen and White, and Passed Assistant Surgeons Streets, Green, and Nash. The cortége found at Markham Station a large gathering of the people of Fauquier County, and from thence passed to Leeds Church, five miles distant, where the final ceremonies were held on February 24.

The services were concluded at the grave, which was in the adjoining churchyard, by the side of his father and brother, and after the grave was filled the new-made mound of earth was quite concealed from view by the great profusion of wreaths, crosses, and other floral offerings, expressions of loving memory of friends at home and tokens of admiration of heroic devotion to duty from strangers in Siberia, Russia, and Germany. The pall-bearers were Medical Directors John N. Browne and Albert L. Gihon, Acting-Chief of the Bureau of Medicine and Surgery William K. Van Reypen, Surgeon Charles H. White, Chief Engineer George W. Melville, and Lieutenant John W. Danenhower, surviving shipmates of Dr. Ambler on board the "Jeannette," Lieutenant William H. Schuetze, who brought his body from Siberia, and Lieutenant William H. Jacques, the personal representative of the Secretary of the Navy.

The late colleagues of Dr. Ambler in the Medical Corps of the Navy are taking measures for the erection of a monument over his grave in Fauquier, and the Medical Faculty of the University of Maryland will place in their hall a memorial tablet.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM FEBRUARY 17, 1884, TO MARCH 1, 1884.

BROWN, JOSEPH B., LIEUTENANT-COLONEL, and BILLINGS, JOHN S., MAJOR,—SURGEONS.—Directed to attend the International Health Exhibition in London, and, as delegates, the International Medical Congress at Copenhagen, to be held in May and August next, respectively; also, to include Berlin on their route to or from Copenhagen, and to be governed by special instructions from the Surgeon-General in complying with this order. S. O. 44, Paragraph 8, A. G. O., February 21, 1884.

WOODWARD, JOSEPH J., MAJOR AND SURGEON.—Leave of absence still further extended six months on account of sickness. S. O. 44, Paragraph 11, A. G. O., February 21, 1884.

HORTON, S. M., MAJOR AND SURGEON.—Having reported at these Headquarters from leave of absence, ordered to Fort Hays, Kansas, for duty. S. O. 40, Paragraph 2, Headquarters Department Missouri, Fort Leavenworth, Kansas, February 20, 1884.

PATZKI, JULIUS H., CAPTAIN AND ASSISTANT-SURGEON.—Leave of absence extended one year on surgeon's certificate of disability, with permission to go beyond sea. S. O. 43, Paragraph 9, A. G. O., February 20, 1884.

MADDOX, T. J. C., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to temporary duty at Meyer's Springs, Texas. Per Post Orders No. 27, Paragraph 1, Fort Clark, Texas, February 13, 1884.

DIETZ, WILLIAM D., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to temporary duty at U.S. Military Academy, West Point, New York.

PHILLIPS, JOHN L., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to temporary duty in Department of the East.

MEARNS, EDGAR A., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to duty in Department of Arizona.

KNERDLER, WILLIAM L., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to duty in Department of Dakota.

BLACK, CHARLES S., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to duty in Department of Texas.

S. O. 46, Paragraph 1, A. G. O., February 25, 1884.

LIST OF CHANGES IN THE MEDICAL CORPS OF THE NAVY FROM FEBRUARY 17, 1884, TO MARCH 1, 1884.

P. A. Surgeon F. S. NASH, detached from the U.S. steamship "Dispatch," and waiting orders.

P. A. Surgeon W. H. RUSH, detached from the "Minnesota," and ordered to duty on board the "Dispatch."

P. A. Surgeon J. H. HALL, to the "Minnesota."

Assistant-Surgeon H. M. WHITAKER, from the "Portsmouth," and on sick-leave.

P. A. Surgeon E. H. GREEN, from Museum of Hygiene, and waiting orders.